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Denmark's Rovebeetles

or

The Danish Genera And Species Of

BEETLE FAMILY STAPHYLINIDAE

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138. H. velata Er.

(Erichs. Käf. Mk. Pr. I, 310; Jen. Spec. Staph. 89; Kraatz Ins. D. II, 226; Muls. et Rey Brévip. 1875, 377; Ganglb. Käf. M. II, 242).

A little smaller and less glistening than carbonaria, as a rule with lighter antennae and legs; furthermore the antennae are a little shorter and more robust, and pronotum broader.

Black, modulated gloss; elytra often brownish; antennae brownish, their base, mouth-parts and legs reddish yellow.

The entire body is dorsally extremely finely and extremely densely punctated, and with very dense grayish glistening hair vestiture; the head distinctly narrower than pronotum, slightly convex, most often with a small fovea at middle; the antennae rather short, feebly thickened distally, their third joint shorter than the second, the next-last about $1\frac{1}{2}$ times as broad as long, distal joint hardly as long as the two next-last joints together, tapering. Pronotum is somewhat narrower than elytra, nearly $1\frac{1}{2}$ times as broad as long, with anteriorly slightly rounded sides and not narrowing posteriorly, slightly convex, with a feeble fovea posteriorly before scutellum, and sometimes slightly grooved at middle-line; the elytra about $\frac{1}{3}$ longer than pronotum; abdomen rather evenly broad, its foremost dorsal joints somewhat more robustly punctated in the transverse grooves than on the rest of the dorsal surface of the joints. L. 2.5 mm.

In the ♂ the sixth ventral joint of abdomen is somewhat elongate and rounded off at tip, in the ♀ not elongate and triangularly incised at tip. (t. Ganglb.).

Like the two preceding species at ponds, lakes and brooks. Heretofore

not denoted in this country; but as it is distributed and not rare in the entire Middle Europe, and found as far north as the vicinity of Hamburg, it is not unlikely that it also may be found here, most probable in the southmost parts of the country.

26. Genus Brachyusa Muls. et Rey.

(Muls. et Rey Brévip. 1875, 351; Ganglb. Käf. M. II, 240).

The sole species belonging to this genus, which by Erichson was assigned to Homalota, but by Kraatz transferred to the following genus, Tachyusa, is especially separated by, that the first joint of hind tarsi is elongate, and as long as the three following joints together, and from

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Tachyusa by a shorter, broader, into the pronotum deeply embedded head, large eyes, very short temples, a broad pronotum, and a strongly narrowing abdomen, of which the first three ventral joints are not (as in Tachyusa) constricted at base.

To this genus only one Central European species, which also occur in Denmark.

1. B. concolor Er.

(Erichs. Gen. et Spec. Staph. 126; Kraatz Ins. D. II, 155; Muls. et Rey Brévip. 1875, 353; Ganglb. Käf. M. II, 241).

A small species, in color and punctuation most closely resembling Tachyusa atra, but smaller, anteriorly proportionately broader and posteriorly more narrowing, but otherwise especially recognized by the above denoted characters.

Dull black, extremely short and very dense grayish glistening hair

vestiture; the legs pitch-brown with brownish-yellow knees and tarsi or entirely brownish-yellow.

The body entire with extremely fine and dense punctation. The head short and broad, however considerably narrower than pronotum, and imbedded in this almost to the posterior margin of the eyes; the eyes very large and strongly protruding; the temples especially short; antennae slender, not thickened distally, their third joint shorter and finer than the second, the middle ones longer than broad, the next-last as long as broad or longer. Pronotum $1\frac{1}{2}$ times as broad as long, posteriorly almost as broad as elytra and with anteriorly slightly rounded sides, feebly convex, in the ♂ at middle broadly and flatly longitudinally grooved; elytra somewhat longer than pronotum; abdomen strongly tapering, its first free dorsal joint distinctly, the two following not distinctly depressed at base. The legs long and slender and first joint of hind tarsi as long as the three following joints together. L. 2-2.5 mm.

In the ♂ the sixth ventral joint of abdomen is very large, considerably prolonged, at tip broadly rounded off and the edge bristle-haired.

Very rare and local; in this country heretofore only found in few numbers at Nykøbing F. (Kmrhr. Fabritius- Tegnagel) on clayey, swampy ground together with Tachyusa atra. It is distributed in Middle Europe and found in southern England, but not in Sweden.

27. Genus Tachyusa Erichs.

(Erichs. Käf. Mk. Br. I, 307; Gen. Stec. Staph. 69; Kraatz Ins. D. II, 148; Thoms. Skand. Col. III, 3, 4, 5; Muls. et Pey Brévip. 1875, 383; Ganglb. Käf. M. II, 243).

The species of this genus are somewhat differing in form and appearance. While some mostly resemble Homalota, others come closer to Calodera. From the former they are separated, inter alia, by the longer first joint of hind tarsi, from the latter especially by, that the fore-tarsi are 4-jointed.

The body slender or very slender with differently shaped abdomen;

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the head porrect, feebly constricted behind, the constricted part at least half as broad as the head between the eyes; antennae fine and slender; the eyes rather large and more or less protruding; the temples well developed, rounded off, not marginate; maxillary palpi slender, their second and third joints very elongate, the third longest, the fourth very small and spiculi-form; labial palpi slender. In the rest of the mouth-part structure Tachyusa comes close to Homalota.

Pronotum is most often distinctly narrower than elytra, as long as broad or longer; elytra longer than pronotum, their posterior margin inside the outer corners incurved. Abdomen, which, while the animals are in lively motion as a rule is turned upwards, is slender, without side-bristles, in some species rather of even breadth, in others strongly narrowing anteriorly. Ordinarily are not only its first three free dorsal joints distinctly transverse-grooved depressed at base, and in several species furthermore notably elongate (Fig. 88), but also its two-three first ventral joints are at base distinctly constricted (cf. Homalota, subg. Gnypeta). The legs are long and slender; fore-tarsi 4-jointed, the

others 5-jointed; first joint of hind tarsi long, at least as long as the two following joints together.

Tachyusa species are lively, agile diurnal. They live on open, damp ground at the brim of pools, lakes and watering-places, where they with light, agile motions of antennae and abdomen run about in full sunshine. Several species (such as constricta, coarctata et al.) make burrows in sand banks, by moving the single grains of sand with the mouth-parts like ants. As a rule they live in small flocks, often several species together and often in company with other small Staphylinids: Eledius, Stenus, and Homalota species et al.

In this country 6 species are heretofore found, which are distributed in Middle Europe, partly also in North Europe. They can, principally by the abdominal form, be divided into several subgenera.

Key to Subgenera and Species.

1. Abdomen strongly narrowing toward base (Fig. 88), its first three free dorsal joints singly much longer than each of the two following:
 3. Subgenus Tachyusa s. str.....5.
- Abdomen evenly broad, or only feebly narrowing toward base or posteriorly somewhat tapering; its first three free dorsal joints singly scarcely longer than each of the two following.....2.
2. Abdominal first three free dorsal joints rather strongly depressed at base. Antennae feebly thickened distally: 2. Subgenus Ischnopoda Thoms. 3.
- Abdominal first two free dorsal joints rather distinctly, the third

- feebly depressed at base. Antennae filiform, not thickened distally: 1. Subgenus Thinonoma Thoms.- Dull black. L. 2.5-3 mm.
..... 1. T. atra Gravh.
3. Antennae rather short, scarcely longer than head and pronotum together, their third joint shorter than the second. L. 3 mm..
.....4. T. scitula Er.
- Antennae distinctly longer than head and pronotum together, their third joint as long as the second..... 4.
4. Black, forebody with steel blue reflection. L. 3.5-4 mm.....
.....2. T. leucopus Marsh.
- Pitch-black, forebody with metallic reflection. L. 3.5 mm.....
.....3. T. umbratica Er.

5. Abdominal third free dorsal joint shorter than the two following joints together. The legs pitch-brown or reddish-brown with reddish-yellow tarsi. L. 2.5-3 mm..... 5. T. coarctata Er.
- Abdominal third free dorsal joint as long as the following two joints together. Legs entirely reddish-yellow. L. 3 mm.:6. T. constricta Er.

1. Subgenus Thinonoma Thoms.

1. T. atra Gravh.

(Gravh. Micr. 162; Erichs. Käf. Hk. Er. I, 309; Gen. Spec. Staph. 73; Kraatz Ins. D. II, 155; Thoms. Skand. Col. III, 6; Muls. et Rey Brévip. 1875, 360; Ganglb. Käf. M. II, 244).

Easily identified by the color and by very slender, fine antennae, also by the posteriorly distinctly tapering abdomen.

Dull black, with extremely fine and short, rather dense hair vestiture; the legs black or pitch-brown with reddish-yellow inner femora, knees and tarsi.

The body is extremely finely and densely punctated or shagreened and therefore with dull shine; the head nearly as broad as pronotum, posteriorly feebly constricted; antennae long, filiform and not thickened distally, their third joint longer than the second, and all the following considerably longer than broad. Pronotum fully as long as broad, much narrower than elytra, with anteriorly rounded, posteriorly almost straight sides, scarcely narrowing posteriorly, slightly convex and with a longitudinal groove in middle-line, which is most distinct posteriorly; the elytra a little longer than pronotum, slightly convex; abdomen posteriorly distinctly tapering, scarcely narrowing toward base, its third free dorsal joint less distinctly depressed at base than the two first. L. 2. 5-3 mm.

In the ♂ the sixth ventral joint of abdomen somewhat longer than in the ♀ and the pronotal groove deeper.

Common everywhere at the brim of ponds, lakes and brooks, especially on muddy ground.

2. Subgenus Ischnopoda Thoms.

2. T. leucopus Marsh.

(Marsh. Ent. Brit. 506; Ganglb. Käf. M. II, 244. - flavitaris Sahlb. Kraatz Ins. D. II, 153; Muls. et Rey Brévip. 1875, 365. - chalybaea Erichs. Gen. Spec. Staph. 916; Thoms. Skand. Col. III, 5).

Our largest species, easily identified by evenly broad abdomen and the bluish color of the forebody.

Black, finely gray-haired, somewhat glistening; forebody with steel blue gloss; antennae and knees pitch-brown or reddish-brown; tarsi reddish-yellow.

The body dorsally very densely and very finely punctated; the head porrect, about as broad as pronotum, somewhat constricted behind, at middle rather flat, often grooved (σ); the antennae rather long, feebly thickened distally, their third joint as long as the second, the middle

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ones longer than broad, the next-last as long as broad (φ) or a little longer than broad (σ). Pronotum is somewhat narrower than elytra, as long as broad, distinctly narrowing posteriorly, with anteriorly rounded sides, slightly convex, most often with a small fovea posteriorly before the scutellum, and a more or less distinct longitudinal groove in middle-line; elytra $\frac{1}{3}$ longer than pronotum; abdomen evenly broad, its first three free dorsal joints strongly transverse-grooved depressed at base. L. 3.5-4 mm.

In the σ the grooves of head and pronotum are more distinct than in the φ . Sixth ventral joint of abdomen is in the σ elongate and rounded off at tip, in the φ emarginate.

On sandy margins of rivers and ponds; distributed in North and Middle Europe; very rare in this country (Vang and Aalbaek in Vendsyssel, Jrejsdalen; Blykobbeaa, Bornholm et al.), but most often numerous where it is found.

3. T. umbratica Er.

(Erichs. Käf. Mk. Er. I, 310; Gen. Spec. Staph. 73; Kraatz Ins. P. II, 154; Muls. et Rey Brévip. 1875, 363; Janglb. Käf. M. II, 245).

Closely allied to leucopus, but a little smaller and more slender, identified by evenly broad abdomen, and by the color.

Black, or pitch-black, finely gray-haired, rather glistening; fore-body most often with distinct metallic lustre; the elytra sometimes brownish; antennae brown or reddish-brown; legs pitch-brown with lighter tibiae and yellow tarsi.

Dorsal side of body entirely with dense and particularly fine punctation; the head (Fig. 87) hardly as broad as pronotum, porrect and somewhat constricted behind, in the ♂ at middle most often distinctly grooved; antennae rather long and slender, very feebly thickened distally, their second and third joints of same length, the following are all longer than broad or the next-last (in ♀) as broad as long. Pronotum narrower than elytra, as long as broad, feebly narrowing posteriorly, with anteriorly slightly rounded sides, slightly convex, often with feeble medial groove; elytra $\frac{1}{3}$ longer than pronotum; abdomen about of even breadth, or sometimes very feebly narrowed at base; its first three free dorsal joints deeply transverse-grooved depressed at base. L. 3.5 mm.

In the ♂ the sixth ventral joint of abdomen somewhat elongate and at tip rounded off; in the ♀ its posterior margin is rather deeply incised.

Distributed in Middle Europe and England, but not found in Sweden; in Denmark very rare and local; in clay pits, on sandy river brinks and at ponds (Hobro, Grejsdalen; Hjortholm and other places in Sjælland).

4. T. scitula Er.

(Erichs. Käf. Mk. Er. I, 308; Gen. Spec. Staph. 72; Kraatz Ins. D. II, 153; Muls. et Rey Brévip. 1875, 383; Canlb. Käf. M. II, 246).

Closely allied to the two preceding species, but with shorter antennae and anteriorly feebly narrowing abdomen is the intermediate to the two following species.

Black, very finely and rather densely gray-haired, rather glistening; the forebody often with feeble bluish lustre; the antennae reddish-brown with brownish-yellow base; legs pitch-black or pitch-brown with reddish-yellow knees and tarsi.

The body is a little more convex than in the two preceding species; forebody particularly finely and densely, the abdomen a little less densely punctated; the head a little narrower than pronotum, somewhat constricted behind, porrect, at middle sometimes very feebly grooved; antennae short, scarcely longer than head and pronotum together, distinctly thickened distally, their third joint shorter than the second, the four next-last feebly, yet distinctly transverse, distal joint short, tip obtuse. Pronotum a little narrower than elytra, fully as long as broad, very feebly narrowing posteriorly and anteriorly with slightly rounded sides, convex, and posteriorly before scutellum most often with a small fovea; elytra hardly longer than pronotum, evenly broad; base of abdomen noticeably narrowing in anterior direction, its first three free dorsal joints strongly transverse-grooved depressed at base. L. 3 mm.

In the ♂ the next-last ventral joint of abdomen somewhat elongate and rounded off at tip; the head at middle feebly foveate or grooved.

Distributed in Middle Europe and England, but not found in Sweden; very rare in this country on semi-damp on sandy or clayey banks (Hvorup, Blokhus and Flauenskjold in Vendsyssel, in Grejsaslen together with leucopus, umbratica and constricta).

3. Subgenus Tachyusa s. str.

5. T. coarctata Er.

(Erichs. Käf. Mk. Br. I, 308; Gen. Spec. Staph. 71; Kraatz Ins. D. II. 152; Thoms. Skand. Col. III, 4; Muls. et Rey Brévip. 1875, 397; Ganglb. Käf. M. II, 247).

A little shorter and hardly as fine and slender as the following species, but like this distinguished by the forwardly toward the base strongly narrowing shape of abdomen and its peculiarly long first three free dorsal joints.

Black, very finely gray-haired, rather glistening; forebody sometimes with feeble bluish reflection; antennae reddish-brown with a little lighter base; the legs pitch-brown or reddish-brown with reddish-yellow tarsi.

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Forebody with particularly fine and very dense, abdomen with much less dense punctation; the head a little narrower than pronotum, porrect, feebly constricted behind; antennae somewhat longer than head and pronotum together, very feebly thickened distally, their third joint shorter than the second, the middle ones longer than broad, the next-last either as long as broad (δ) or feebly transverse (φ), distal joint obtuse at tip. Pronotum a little narrower than elytra, scarcely narrowing posteriorly, with anteriorly very feebly rounded sides, as long as broad, convex, and

sometimes with a small feeble fovea posteriorly before the scutellum; elytra $\frac{1}{3}$ longer than pronotum, roundly narrowing posteriorly, convex, their posterior margin together broadly incurved, whereby the outer hind corners become strongly prominent. Abdomen strongly narrowing anteriorly, its first three free dorsal joints elongate and singly considerably longer than the fourth or fifth, but all three of equal length and very strongly depressed at base, their hindmost part rather convex, very finely and not densely punctated, the two following joints more densely and distinctly punctated. L. 2.5-3 mm.

In the ♂ the sixth ventral joint of abdomen elongate and rounded off at tip.

Distributed throughout North and Middle Europe. In this country very rare and local, at lakes and water-coarces or on damp sand banks (at Damhusso, Copenhagen, at the Sound, at Maribo lake et al.).

6. T. constricta Er.

(Erichs. Käf. Mk. Br. I, 307; Gen. Spec. Staph. 70; Kraatz Ins. D. II, 151; Thoms. Skand. Col. III, 1; Muls. et Rey Brévip. 1875, 400; Ganglb. Käf. M. II, 247).

Very slender and narrow, and easily identified by its anteriorly almost wasp-like narrowing abdomen and by the unicolorous yellow legs. The first three free dorsal joints of abdomen are more strongly elongate than in coarctata.

Black, very finely gray-haired, rather glistening, the forebody sometimes with feeble metallic lustre, antennae brownish, their base, the mouth-parts and legs reddish yellow.

Forebody very finely, but not very densely punctated; abdomen anteriorly almost smooth, posteriorly rather densely punctated. The head (Fig. 88) is as broad as pronotum, posteriorly roundly narrowing and distinctly constricted; antennae rather short, distinctly thickened distally, their third joint a little shorter than the second, the middle ones longer than broad, the three next-last, especially in the ♀, feebly transverse, distal joint somewhat thickened, obtuse tip. Pronotum is narrower than elytra, a little longer than broad, scarcely narrowing posteriorly, with anteriorly rounded off sides and corners, convex, sometimes with a feeble small fovea posteriorly before scutellum; elytra $1\frac{1}{2}$ times as long as pronotum, roundly narrowing posteriorly, convex, their mutual posterior mar-

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gin broadly incurved and the outer corners thereby becoming acute; abdomen peculiarly strongly narrowing anteriorly toward base, its first three free dorsal joints strongly depressed at base, strongly and increasingly elongate, so that the third becomes as long as or longer than the fourth and fifth together. L. 3 mm.

In the ♂ the sixth ventral joint of abdomen somewhat elongate and rounded off at tip; in the ♀ feebly emarginate at tip.

Distributed throughout North and Middle Europe. In Denmark very rare and local; on damp sand banks and sandy river banks or like places, sometimes together with Stenus species, Chilopora rubicunda and Lledius species. (Grejsdalen, 8. 93, at Lyngby lake 8. 88).

28. Genus Myrmecopora Saulcy.

(Saulcy Ann. Soc. Entom. Fr. 1864, 429; Ganglb. Käf. M. II, 249. - Ilyusa Muls. et Rey Brévip. 1875, 410, subg. Xenusa).

Closely related to Tachyusa, but with posteriorly more strongly constricted head, of which the neck is only $\frac{1}{3}$ as broad as the head between the eyes. In this respect it is strongly approaching the following genus, Falagria, in which the neck is still thinner.

The body is rather flat; the head porrect, with rather long temples, more or less rounded-off temple corners, and often almost straight posterior margin; temples and genae are immarginate; antennae rather slender; pronotum narrower than elytra, posteriorly most often narrowing, its fore-corners rounded-off deflected; the elytra evenly broad; first three free dorsal joints of abdomen depressed at base; legs shorter or less slender than in Tachyusa, and the first joint of hind tarsi about as long as the three following joints together.

The main habitat of the species of this genus is South Europe, but two, which live on the strand under seaweed, occur farther north, inter alia in England, and one of these is also found in this country.

1. M. sulcata Kiesw.

(Kiesw. Stett. Ent. Zeitg. 1850, 218; Muls. et Rey Brévip. 1875, 416; Ganglb. Käf. M. II, 251).

A small, rather evenly broad and flat species, in appearance somewhat reminiscent of Homalota immersa.

Black, very finely gray-haired, dully glistening; antennae and mouth-parts brown or brownish-red; legs brownish yellow with darker femora.

The entire body densely and distinctly shagreened in surface and due to this with dull or feeble shine; the head is large, as broad as pronotum, nearly square, with straight sides and posterior margin, also distinct, scarcely rounded off hind corners, strongly constricted behind

forming a narrow, very short neck, $1/3$ as broad as the head between the eyes (best visible with severed head), dorsally with flat, dense and rather fine punctation, at middle often flatly longitudinally grooved (σ); the eyes about as long as temples and not protruding; antennae rather slender, longer than head and pronotum together, scarcely thickened distally, their third joint about as long as the second, thin at base, the fourth and fifth as long as broad, the next-last joints feebly, yet distinctly transverse, distal joint tapering, oval. Pronotum is narrower than elytra, as broad as long, distinctly narrowing posteriorly, with posteriorly almost straight, anteriorly strongly rounded sides and rounded off fore-corners, flatly convex, very finely and densely punctated, at middle-line in the σ broadly and distinctly, in the ϕ narrow and indistinctly grooved; the elytra flat, evenly broad, $1/2$ longer than pronotum, punctated like same; abdomen rather evenly broad or very feebly narrowing anteriorly, rather fine and isolated punctation, its first three free dorsal joints slightly transverse-grooved depressed at base, the fifth shorter than the fourth. The legs are rather short, the tarsi much shorter than the tibiae, and first joint of hind tarsi fully as long as the following two joints together. L. 2-2.5 mm.

On the strand under seaweed; it is here found on Eyrnaes at Aalborg (23. 7. 1900, School-superintendent N. P. Jørgensen, Odense), later in Lyø, Agernaes and at Bandholm (by same).

A very closely allied species, M. uvida Er., is distributed along the coast of South England and West Europe. It is larger, 3 mm long, lighter in color, pitch-black with light rust-red antennae, mouth-parts and legs, elytra sometimes brownish. Often found together with sulcata (Fowler), and its occurrence here is not entirely improbable.

29. Genus Falagria Mannh.

(Mannerh. Brach. 14; Erichs. Käf. Mk. Br. I, 293; Gen. Spec. Staph. 48; Kraatz Ins. D. II, 32; Thoms. Skand. Col. II, 297; Muls. et Pey Brévip. 1875, 433; Ganglb. Käf. M. II, 253).

An easily identified genus, of which the most important characters within the division are: the posteriorly very strongly constricted head, the cordate pronotum, and the long first joint of hind tarsi. The strongly constricted head and form of the body give these species some likeness to Autalia in the following division, but is decisively separated from this genus by, inter alia, that only the fore-tarsi are 4-jointed.

The head is proportionately large, rounded, free, posteriorly strongly neck-shaped constricted; the neck very thin, hardly $\frac{1}{2}$ as broad as the head between the eyes; the eyes rather large, not protruding; temples and genae marginate; antennae rather robust and slightly thickened distally.

Pronotum more or less cordate, at middle-line often deeply grooved;

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in several species the scutellum also with an entire deep groove, of which

the sides are sharply carinated. The elytra are convex, their posterior margin straight and inside the outer corners hardly incurved. Abdomen evenly broad or feebly narrowing anteriorly, its first three free dorsal joints strongly depressed at base; ventral side somewhat convex, the first ventral joint longer than the following and more distinctly constricted at base than the second and third joints. In running the abdomen is often curved upward. The legs are slender; fore-tarsi 4-jointed, the others 5-jointed; first joint of hind tarsi as long as the three following joints together. - Remarkable or peculiar sex-characters on the next-last joint of abdomen do not occur, but the impressions on pronotum are deeper and more distinct in the ♂ than in the ♀.

In this country 5 species are found, which are distributed in North and Middle Europe. They prefer decaying plants in heaps, but some are also found on the strand under seaweed, an occasional one on more dry ground in gravel pits. - They can be divided into three subgenera.

Key to Subgenera and Species.

1. Pronotal sides and posterior margin very finely bounded. Elytra not with fovea between scutellum and humeri.....2.
- Pronotal sides and posterior margin not bounded. Elytra with a small, yet distinct fovea between scutellum and humeri: 3. Subgenus Cardiola Muls. - Pronotum finely or indistinctly grooved. L. 2.5 mm..... 5. F. obscura Gravh.
2. Scutellum sharply grooved (Fig. 89); pronotum deeply grooved: 1. Subg. Palagria s. str.3.

2. Scutellum not grooved: 2. Subgenus Anaulacaspis Ganglb.....4.
3. Elytra distinctly longer than pronotum, very finely and rather densely punctated. L. 2.6 mm..... 1. F. sulcata Payk.
 - Elytra not longer than pronotum, with extremely fine and very scattered punctation. L. 2-2.5 mm.....2. F. sulcatula Gravh.
4. Pronotum rather deeply grooved, yellow-red. L. 2.5-3 mm.....
 - 3. F. thoracia Curt.
 - Pronotum finely or indistinctly grooved and like the entire body black. L. 2mm.....4. F. nigra Gravh.

1. Subgenus Falagria s. str.

1. F. sulcata Payk.

(Payk. Mon. Staph. 32; Erichs. Jen. Spec. Staph. 49; Kraatz Ins. D. II, 34; Thoms. Skand. Col. II, 297; Muls. et Rey Brévip. 1875, 436; Ganglb. Käf. M. II, 255).

Easily identified by the deep grooves of pronotum and scutellum, and in regard to the following species by longer and somewhat more distinctly punctated elytra.

Black or pitch-black, glistening, finely haired; elytra often brown; antennae and mouth-parts brownish, the former most often lighter at base; legs brownish yellow.

The head (Fig. 89) is as broad as pronotum, convex, with extremely fine scattered punctation; antennae scarcely longer than head and pronotum together, rather robust, but only feebly thickened distally, their third joint about as long as the second, the next-last four a little broader than long, distal joint oval, tip obtuse. Pronotum cordate, anteriorly

as broad as long and considerably narrower than elytra, strongly narrowing posteriorly, the sides and also posterior margin very finely marginate, anteriorly very strongly rounded, dorsum convex, with particularly fine, isolated punctation, medial line strongly, especially posteriorly very deeply grooved. Scutellum large, in its entire length deeply, sharp-margined grooved; elytra distinctly longer than pronotum, however shorter than their breadth together, particularly fine, scattered punctation, sides posteriorly feebly rounded; abdomen faintly narrowing toward base, anteriorly densely and finely, posteriorly very finely punctated. L. 2.5 mm.

Frequent in gardens, most often numerous in compost and at hot-house boxes, more rarely in alluvium at lakes and brooks.

2. F. sulcatula Gravh.

(Gravh. Micr. 151; Erichs. Gen. Spec. Staph. 50; Kraatz Ins. D. II, 35; Thoms. Skand. Col. II, 298; Muls. et Pey Brévip. 1875, 439; Ganglb. Käf. M. II, 256).

Very closely allied to sulcata, and like this with deeply grooved pronotum and sharp-grooved scutellum, but distinctly smaller, with shorter, indistinctly punctated elytra and lighter legs.

Black or pitch-black, very finely, sparsely haired, strongly glistening; elytra most often brown; antennae pitch-black or pitch-brown with brownish-yellow base, mouth-parts and legs reddish-yellow. - In teneral animals forebody and abdomen are often brownish-red.

Head, pronotum and elytra with extremely fine or simple and indistinct punctation, polished; the head as broad as pronotum; the antennae proportionately more robust than in sulcata, and distinctly thickened distally;

pronotum is narrower; but especially is the elytra shorter than in the preceding species, scarcely longer than pronotum, shorter than their breadth together, abdomen is not of even breadth, but feebly fusiform, broadest across the third and fourth free dorsal joints, punctation isolated and fine. L. 2-2.5 mm.

Like the preceding species in compost, at hot-house boxes etc. and often in company with same, but rarer, more frequent than this on beaches under seaweed or on lake shores in alluvium. Sometimes very numerous in compost.

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2. Subgenus Anaulacaspis Ganglb.

3. F. thoracia Curt.

(Curtis Brit. Entom. X, pl. 462; Erichs. Gen. Spec. Staph. 52; Kraatz Ins. D. II, 34; Muls. et Rey Brévip. 1875, 442; Ganglb. Käf. M. II, 257).

A little larger than obscura, and easily identified by the color of pronotum.

Finely gray-haired, glistening; the head pitch-black or reddish-brown; pronotum reddish-yellow; elytra brownish-yellow; abdomen pitch-brown or pitch-black; the antennae reddish-brown, their base, mouth-parts and legs reddish-yellow.

The head is as broad as pronotum, strongly glistening, extremely finely or indistinctly punctated; antennae robust, distinctly thickened distally, their third joint as long and as thick as the second, the middle and next-last ones distinctly transverse, about of same length, distal joint short, obtuse tapering. Pronotum cordate, anteriorly strongly rounded, narrower than elytra, posteriorly strongly narrowing, dorsum convex,

with particularly fine, isolated punctation, in middle-line especially posteriorly deeply, but not entirely grooved, posterior margin and sides finely margined; elytra longer than pronotum, with modulated shine, around scutellum and together with this particularly densely and rather finely punctated, posteriorly and on sides with much more scattered and finer punctation; abdomen feebly fusiform, finely and rather densely punctated, posteriorly a little more densely and distinctly punctated than anteriorly.

L. 2.5-3 mm.

Distributed in Middle Europe, but not found in Sweden; very rare in Denmark, on the strand under seaweed and other alluvium (Nyminde at Fing-købing Fjord; Hulerød and Refnaes in North Zealand, at Guldborgsund and in Møen). In Middle Europe said to be found with Myrmica rubra.

4. F. nigra Gravh.

(Gravh. Micr. 75; Erichs. Käf. Mk. Br. I, 296; Gen. Spec. Staph. 54; Kraatz Ins. D. II, 36; Thoms. Skand. Col. II, 298; Muls. et Rey Brévip. 1875, 449; Ganglb. Käf. M. II, 257).

A small species, considerably smaller than our other species, with indistinctly grooved, posteriorly finely margined pronotum.

Black or pitch-black, finely haired, glistening; elytra often brown with yellowish-brown posterior margin; antennal base and mouth-parts brownish; legs brownish yellow.

The head as broad as pronotum, very finely and not densely punctated; antennae short, robust, distinctly thickened distally, their third joint shorter than the second, the middle and next-last (5-10) rather strongly transverse, distal joint short oval. Pronotum is short cordate, narrower

than elytra, convex, finely and rather densely punctated, with a small fovea posteriorly before scutellum, and with fine or indistinct medial groove, posterior margin distinctly bounded; elytra longer than pronotum, together with the scutellum with fine, but more isolated punctation than this; abdomen feebly fusiform, punctation fine and scattered. L. 2 mm.

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Distributed throughout North and Middle Europe, but not found in England. Especially rare in this country; on sandy or gravelly ground, in sand holes or gravel pits (Gilleleje; Gødved at Silkeborg, vicinity of Sønderborg). According to Thomson not rare in Skaane in dry gravel pits.

3. Subgenus Cardiola Muls. et Rey.

5. F. obscura Gravh.

(Gravh. Micr. 74; Erichs. Käf. Mk. Br. I, 295; Gen. Spec. Staph. 54; Kraatz Ins. D. II, 35; Thoms. Skand. Col. II, 298; Muls. et Rey Brévip. 1875, 455; Ganglb. Käf. M. II, 257).

From the preceding species especially separated by, that sides and posterior margin of pronotum are immarginate, and that the elytra have a distinct, fovea-shaped impression inside the humeral angle. Pronotum is posteriorly more strongly and more roundly narrowing than in any other species.

Reddish-brown or pitch-brown, finely haired, glistening; the elytra most often of lighter color than the rest of the body, the head and the next-last abdominal joints sometimes darker; antennae and mouth-parts brownish-red; the legs reddish-yellow.

The head is as broad as pronotum, indistinctly punctated, polished, on the vertex of the ♂ impressed or broadly grooved; antennae rather ro-

bust, distinctly thickened distally, their third joint as long as the second, the middle ones as long as broad, especially in the ♂, the next-last rather strongly transverse, distal joint robust, oval, tapering. Pronotum is much narrower than elytra, strongly cordate, with anteriorly strongly, posteriorly more feebly rounded sides, strongly convex, with extremely fine and rather scattered punctation, in the ♂ at middle broadly and flatly longitudinally grooved; sides and posterior margin not margined. Elytra scarcely $\frac{1}{3}$ longer than pronotum, shorter than their breadth together, convex, with slightly rounded sides, with particularly fine, isolated punctation and with a distinct, fovea-shaped impression between humeri and scutellum; abdomen feebly fusiform, with entire dense and fine punctation. L. 2.5 mm.

Distributed everywhere in Europe, and in this country numerous in compost and in the with bark mixed manure around hot-house boxes in gardens and parks, more rarely in fungi.

3. Division Politocharina.

The head not with snout-shaped prolongation; maxillary palpi rather short, their second and third joints not unusually elongate. Fore- and middle-tarsi 4-jointed; only the hind-tarsi 5-jointed.

Key to Genera.

1. Elytra each with two deep, elongate foveae on base. The head very strongly neck-shaped constricted, the neck only $\frac{1}{5}$ as broad as the head
.....30. Autalia Leach.

1. Elytra without such foveae at base.....2.
2. Fore- and middle-tibiae in outer margin strongly dentate, fossorial;
tarsi short..... 33. Phytosus Curt.
- Tibiae not dentate..... 3.
3. Middle-coxae narrowly separated or contiguous. The head more or less
densely and finely, rarely indistinctly punctated..... 4.
- Middle-tibiae rather broadly separated. Head sparsely or only punc-
tated on sides, often polished. Eyes most often remarkably large
(Fig.95). Abdomen comparatively short and broad (Gyrophaeina Seidl).
..... 10.
4. Head rather strongly constricted behind, porrect, neck short, about
half as broad as the head (Fig91).....31. Politochara Mannh.
- Head not or only feebly constricted behind, most often rather deeply
imbedded into pronotum, more rarely somewhat porrect..... 5.
5. Posterior margin of elytra (in our species) distinctly incurved.. 6.
- Posterior margin inside outer corners not or insignificantly in-
curved..... 8.
6. First joint of hind tarsi short, not longer than the second.....
..... 34. Silusa Er.
- First joint of hind tarsi somewhat elongate, about twice as long as
the second.....7.
7. Pronotum short and broad, at least as broad as elytra, inside ~~hind~~
hind corners sometimes feebly incurved. Body rather broad and
flat.....35. Euryusa Er.

7. Pronotum (in our species) a little narrower than elytra. Body rather narrow and elongate.....32. Leptusa Kr.
8. First joint of hind tarsi elongate, as long as the three following joints together. The head much narrower than pronotum.:38. Placusa Er.
- First joint of hind tarsi short, as long as or only very little longer than the second.....9.
9. Temples and genae margined. First three free dorsal joints of abdomen depressed at base..... 36. Epipeda Muls.
- Temples and genae not margined. First four free dorsal joints of abdomen depressed at base, the sixth at tip with three acute spines of which the middle one is longest (Fig. 93). Body flat and thin. 37. Thectura Thoms.
10. Body strongly convex, somewhat rough-haired.....41. Brachida Muls.
- Body flatly convex, very finely and sparsely haired or naked, most often variegated coloring..... 11.
11. Pronotum narrower and shorter than elytra; head rather porrect... ..39. Gyrophaena Mannh.
- Pronotum about as broad and long as elytra; The head up to the eyes imbedded in the pronotum. Abdomen fully as broad as elytra, concave and curved upwardly..... 40. Encephalus Westw.

30. Genus Autalia Mannh.

(Mannh. Brach. 1830, 14; Erichs. Käf. Mk. Br. I, 291; Gen. Spec. Staph. 46; Kraatz Ins. D. II, 29; Thoms. Skand. Col. II, 261; Muls. et Fey Brévip. 1871, 310; Ganglb. Käf. M. II, 260).

The species of this, in several respects peculiar genus are in appear-

ance somewhat similar to Falagria Mannh. not only by the entire form of the body, but especially on account of the free, posteriorly very strongly constricted head. This is anteriorly as broad as pronotum or broader, with convex, somewhat protruding eyes, back of these rounded off and constricted into a very thin, knob-like neck, only $\frac{1}{5}$ as broad as the head.

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Antennae rather robust, slightly thickened distally; temples and genae not margined. Of the mouth-parts the tongue (Fig. 90) especially remarkable, both by its unusual length, and also that the tip is deeply cleft into two narrow lobes, which each again are divided into two very fine branches, of which the outmost curve strongly outwards. Labial palpi are only two-jointed, inasmuch as the first two joints are connate forming a considerably longer joint than the last.

Pronotum much narrower than elytra, scarcely narrowing posteriorly, but from the middle forwardly strongly roundly narrowing toward the neck, whereby the free position of the head is further emphasized, posterior margin straight and hind corners almost rectangular, dorsum at middle posteriorly with two sharp longitudinal grooves, one on each side of the medial line, posteriorly connected by a transverse groove, outside of this with a small, yet distinct fovea inside the corners. The elytra posteriorly somewhat ventose rounded inward toward base of abdomen, humeri rather prominent; between these and scutellum each elytron at base with two elongate foveae, a peculiarity not occurring in any other of our Staphylinidae, and which strongly tends to give the Autalia species a certain likeness

to Pselaphids. Abdomen is broadest across the third-fourth free dorsal joints, more or less narrowing anteriorly, its first three free dorsal joints depressed at base and the first two with a very fine carina-like line; ventral side convex, the first three ventral joints impressed at base; as a rule abdomen is curved strongly upward and forward in running and at rest. The legs are slender; fore- and middle-tarsi 4-jointed, hind tarsi 5-jointed, these first four joints short and of same length, together scarcely longer than the claw-joint. Distinct sex-characters do not occur.

The species live in fungi and rotting plant-matter. Of the 5 European species, which are known, 3 from North and Middle Europe; 2 are heretofore found in this country, the third is not improbable and is included in the following.

Key to Species.

1. Body predominantly yellow-red, metathorax and the next-last abdominal joints black. L. 2.5-3 mm.....1. A. impressa Oliv.
- Body black..... 2.
2. Pronotum indistinctly punctated, with deep medial groove. L. 1.5-2 mm..... 2. A. rivularis Gravh.
- Pronotum distinctly and rather densely punctated, with a feeble, posteriorly evanescent medial groove. L. 2.5 mm.: 3. A. puncticollis Sharp.

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1. A. impressa Oliv.

(Oliv. Entom. III, 42; Erichs. Käf. Mk. Br. I, 292; Gen. Spec. Staph.

47; Kraatz Ins. D. II, 31; Thoms. Skand. Col. II, 261; Muls. et Rey Brévip. 1871, 313; Ganglb. Käf. M. II, 262).

In connection with the generic characters this species is especially identified by the color.

Red or yellow-red, glistening, very finely and sparsely haired; head, metathorax and the next-last abdominal joints black; elytra most often darkly reddish-brown; antennal base, mouth-parts and legs yellow-red.

The head is proportionately large, fully as broad as pronotum, polished and impunctate; antennae a little longer than head and pronotum together, slightly thickened distally, their second and third joints of equal length, the fourth longer than broad, the next-last four feebly transverse. Pronotum almost only half as broad as elytra, as broad as long, convex, polished, indistinctly punctate and with a very fine medial groove anteriorly; those in the generic description mentioned dorsal grooves reach to the middle, from there feebly diverging forwardly. Elytra 1½ times as long as pronotum, posteriorly a little ventose, indistinctly punctated, polished, each at base with two distinct, elongate foveae; abdomen rather strongly narrowing anteriorly, its foremost joints with very fine and scattered, the hindmost more distinct punctation. L. 2.5-3 mm.

Especially distributed in all our woodland regions, and in the autumn often numerous in fungi.

2. A. rivularis Gravh.

(Gravh. Micr. 73; Erichs. Käf. Mk. Br. I, 293; Gen. Spec. Staph. 47; Kraatz Ins. D. II, 32; Thoms. Skand. Col. II, 261; Muls. et Rey Brévip. 1871, 316; Ganglb. Käf. M. II, 262).

Only half as large as impressa and of dark color, but the body of same form.

Black, glistening, rather finely haired, along the sides somewhat rough-haired; antennal base and mouth-parts brownish, legs brownish-red-yellow.

Head as broad as pronotum, polished and not punctated; antennae slightly more slender than in the preceding species, their next-last joints hardly transverse. Pronotum with simple and feeble punctation or almost impunctate, and a rather deep medial groove, which posteriorly runs into the transverse groove, its two dorsal grooves are robust and diverging forwardly, the corner-foveae deep and somewhat elongate; elytra $1\frac{1}{2}$ times as long as pronotum, smooth, with distinct basal foveae and a fine sutural groove; abdomen feebly narrowing anteriorly, forwardly almost smooth, hindwardly finely and sparsely punctated. L. 1.5-2 mm.

Distributed in North and Middle Europe, but rare in this country; at rotting plants, under dry cow-manure and sometimes in fungi.

3. A. puncticollis Sharp.

(Sharp Transact. Entom. 1864, 45; Thoms. Skand. Col. IX, 204; Muls. et Rey Brévip. 1871, 320; Janglb. Käf. M. II, 262).

Of same size as impressa or a little smaller, but black like rivularis, glistening, with rather long and dense, gray rough-hair vestiture; legs brownish-yellow with darker femora.

Head very finely, pronotum distinctly and rather densely punctated, its groove in middle-line feeble and posteriorly entirely evanescent, the other grooves and the corner-foveae same as in impressa. Elytra and ab-

domen very finely, yet distinctly, rather densely punctated. L. 2.5 mm.

It is found in northern England, Scotland, Iceland, here and there in Middle Europe especially in mountainous regions and (t. Thoms.) also in Skaane. It is not impossible that it may be discovered in this country, most likely in Bornholm. In the Scots' highlands particularly found at sheep-manure (Fowler).

31. Genus Bolitochara Mannh.

(Mannerh. Brachelytr. 75; Erichs. Käf. M. Br. I, 296; Gen. Spec. Staph. 57; Kraetz Ins. D. II, 36; Thoms. Skand. Col. II, 272; Muls. et Rey Lrévip. 1871, 194; Ganglb. Käf. M. II, 262).

The body slender, yet robust, rather convex; head porrect, broadest across the somewhat protruding eyes, back of these roundly narrowing ~~and~~ and constricted behind forming a short, rather broad neck, about half as broad as the head across the eyes; temples and genae sharply marginate; antennae robust, smoothly thickened distally; maxillary palpi rather long and slender, their third joint a little longer than the second, the last finely, subuliform; the tongue narrow and long, cleft at tip; labial palpi three-jointed.

Pronotum much narrower than elytra, from middle forwardly narrowing with strongly deflected, rounded fore-corners, scarcely narrowing posteriorly and with obtuse or almost rectangular hind-corners; elytra longer than pronotum, rather convex, the sides feebly rounded with somewhat prominent humeri and inflected hind corners, posterior margin inside these distinctly incurved. Abdomen rather evenly broad or slightly narrowing posteriorly, its first four free dorsal joints depressed at base, but the fourth

less distinctly so than three preceding, the sides till over the middle robustly margined; ventral side convex, and abdomen often carried slightly curved upward. Pro- and mesosternum each with a distinct carina at middle-line. Legs long and slender; fore- and middle-tarsi 4-jointed, only hind tarsi 5-jointed, and the first joint of these as long as the following two joints together. Sex-characters are often found in the ♂ on elytra or on the next-last joints of abdomen.

The species live, as the name indicates, in fungi. From Middle and

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North Europe 6 species are known, of which 3 are heretofore found in this country. Besides these 2 others are included here, which perhaps can yet be encountered.

Key to Species.

1. Abdomen yellow-red or yellow-brown, as a rule with a black or dark band before the tip. Antennal distal joint yellow.....2.
- Abdomen and the antennal distal joint black or pitch-black; the foremost abdominal joints sometimes reddish-brown. L. 3.5 mm.....
..... 5. B. obliqua Er.
2. Neck of the head rather narrow, scarcely half as broad as the head at its greatest diameter. L. 4.5-5 mm.....1. B. lucida Gravh.
- Neck broader, more than half as broad as the head at greatest diameter:3.
3. Head and pronotum reddish-brown. Elytra with a distinct impression. L. 4.5-5 mm..... 2. B. Mulsanti Sharp.
- Head black. Pronotum yellow-red. Elytra without distinct impression...4.

4. Head rather robustly, but not densely punctated. Elytra in the ♂ at the suture posteriorly with a fine, yet distinct longitudinal carina. L. 4-4.5 mm.....3. B. lunulata Payk.
- Head coarsely and densely punctated. Elytra in the ♂ at suture posteriorly most often without distinct longitudinal carina. L. 3.5-4 mm..... 4. B. bella Mark.

1. B. lucida Gravh.

(Gravh. Micropt. 70; Erichs. Gen. Spec. Staph. 58; Kraatz Ins. D. II, 38; Muls. et Rey Brévip. 1871, 198; Ganglb. Käf. M. II, 264).

Somewhat larger and darker than the ordinary lunulata, with narrower neck, broader pronotum and more coarsely punctated elytra.

Brownish-red or reddish-brown, somewhat glistening, finely and sparsely haired; the head darkly brown, pronotum often also darkly brownish; elytra brownish-black, with a more or less extensive, obliquely inwardly directed spot on humeri, and their posterior part at the suture brownish-red; a band before the tip of abdomen brownish-black; antennae brownish, their base and tip, mouth-parts and legs reddish or brownish yellow.

The head nearly as broad as pronotum, rather robustly, but not densely punctated, posteriorly strongly rounded narrowing and rather strongly constricted, so that the neck is hardly half as broad as the head across the eyes; antennae rather long and robust, thickened distally, their third joint fully as long as the second, the fourth and fifth longer than broad, the following and the next-last feebly increasing, but distinctly transverse, distal joint tapering, as long as the two preceding joints together. Pronotum much narrower than elytra, somewhat broader than long, with

sharp rectangular hind corners, strongly rounded narrowing anteriorly, convex, rather robustly and densely punctated and with a transverse fovea posteriorly before scutellum; elytra $\frac{1}{3}$ longer than pronotum, with robust and dense scabrous punctation, slightly impressed around scutellum and obliquely across the middle, whereby a feeble oblique fold originates from the base nearest humeral callus inwardly toward hindmost part of the suture. The transverse grooves of the first three free dorsal joints of abdomen with robust and rather dense punctation, the rest with rather fine and isolated punctation. L. 4.5-5 mm.

In the ♂ the elytra posteriorly, along the hindmost part of the suture with a longitudinal carina, the fifth free dorsal joint of abdomen at middle with a rather sharp longitudinal carina and the sixth with a finer one.

It lives in tree-fungi, but everywhere in North Europe rare and local. In Denmark formerly found sparsely at Ry and Silkeborg (Schjødte), but later apparently not refound.

2. E. Mulsanti Sharp.

(Sharp Entom. Monthl. Mag. XII, 1875, 132; Ganglb. Käf. M. II, 264.-elongata Muls. et Rey Brévip. 1871, 202).

Much like preceding species, of same size and color, but a little more slender; the head less strongly constricted behind and the neck more than half as broad as the head at greatest diameter, the eyes less protruding; pronotum as well as the head with finer and less dense punctation; impressions and punctation of the elytra same as in lucida, L. 4.5-5 mm.

In the ♂ the fifth free dorsal joint with a longitudinal carina as in lucida, but the sixth without carina.

Here and there in Middle Europe, also in Skaane; in this country heretofore only found singly at Tørning (Haderslev) in tree-fungi (8, 1903 and 1906. L. Andersen and J. Andersen).

3. B. lunulata Payk.

(Payk. Mon. Staph. 58; Erichs. Käf. Mk. Er. I, 297; Gen. Spec. Staph. 58; Kraatz Ins. D. II, 39; Thoms. Skand. Col. II, 273; Janglb. Käf. M. II, 264. - flavicollis Muls. et Rey Brévip. 1871, 206)

A slender species, especially identified by the color and sex-characters of the ♂.

Yellow-red, rather glistening and sparsely haired; the head and a more or less extensive spot on the outer hind corners of elytra, also a transverse band before the abdominal tip black or pitch-brown; antennae most often brownish, their base, also distal joint and the legs reddish-yellow.

The head (Fig. 91) is rather large, not deeply nor densely punctated, roundly narrowed posteriorly, and constricted into a rather broad neck, amply half as broad as the head across the eyes; these somewhat protruding; antennae rather long and robust, their third joint longer than the second, the middle and next-last ones increasingly transverse, so that these become

about twice as broad as long; distal joint tapering, a little longer than the two preceding joints together. Pronotum much narrower than elytra, anteriorly rounded and strongly narrowing, the sides posteriorly nearly straight and the hind corners less sharply rectangular than in the two preceding spe-

-cies, dorsum convex, rather finely and densely punctated, with a transverse fovea or double fovea posteriorly before scutellum; elytra $\frac{1}{3}$ longer than pronotum, coarsely and densely punctated, anteriorly along the suture in the ♀ feebly, in the ♂ more strongly impressed. Abdomen anteriorly, especially in the transverse grooves of the foremost dorsal joints, robustly and densely punctated, posteriorly much finer and less densely punctated. L. 4-4.5 mm.

In the ♂ the elytra posteriorly along the suture with a fine carina, the fifth free dorsal joint of abdomen at middle a sharp carina, the sixth with a very fine, often indistinct carina.

Common, especially in all our woodland regions in the autumn often very numerous in fungi, especially Agaricus species. Distributed in the entire Europe.

4. B. bella Mark.

(Märk. Germ. Zeitschr. V, 1844, 209; Kraatz Ins. D. II, 39; Janglb. Käf. M. II, 265. - lunulata Muls. et Rey Brévip. 1871, 209).

From the preceding species, which it is like in color, it is separated by the following details:

It is a little smaller and considerably narrower; the head sometimes brownish-red, posteriorly less strongly narrowed, dorsally much more coarsely and densely punctated; the antennae shorter and the outer joints somewhat more strongly transverse; pronotum posteriorly very little narrower than elytra, and anteriorly not as strongly narrowing, hind corners somewhat more sharply rectangular. - In the ♂ the fine carina along the suture of elytra posteriorly is often feeble, and the fifth free dorsal joint of abdomen

with a fine carina, but the sixth without carina. L. 3.5-4 mm. (t. Ganglb.).

Its principal habitat is southern Middle Europe, and it is not found in Denmark. Thomson (Skand. Ins. Coleopt. 44) refers to it as found in Skaane, but it is most probable that E. bella Thoms. = E. Mulsanti Sharp.

5. E. obliqua Br.

(Erichs. Käf. Mk. Br. I, 298; Gen. Spec. Staph. 59; Kraatz Ins. D. II, 40; Muls. et Fey Brévip. 1871, 214; Ganglb. Käf. M. II, 265).

From all preceding species it is easily separated especially by the color.

The head is black; pronotum darkly brown or reddish-brown; elytra brownish-yellow or brownish-red with a mutual, black spot around scutellum, and a large black spot on hind corners; abdomen pitch-black; posterior margins of the foremost joints reddish-brown; antennae, including distal joint, brownish-black, their base, mouth-parts, and legs brownish red.

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Head rather strongly and densely punctated; neck fully half as broad as head, antennae robust, their next-last joints twice as broad as long; pronotum densely and rather strongly punctated, elytra coarsely and very densely punctated and these anteriorly at the suture slightly impressed; abdomen robustly and densely punctated in the transverse grooves of the foremost dorsal joints, posteriorly with finer and more scattered punctation. L. 3.5-4 mm.

In the ♂ the fifth free dorsal joint of abdomen is without carina at middle, but all over with scattered granulate-punctuation, the elytra along suture posteriorly without longitudinal carina. (t. Ganglb.).

Distributed everywhere in Middle Europe, and found in Holsten (Preller;

Käf. v. Hamburg u. Umgegend); it may possibly also be found in this country.

32. Genus Leptusa Kr.

(Kraatz Ins. D. II, 1875, 60; Thoms. Skand. Col. II, 275 and 276 (Leptusa and Pachygluta); Muls. et Rey Brévip. 1871, 173 and 277 (Leptusa and Pachygluta; Ganglb. Käf. M. II, 271.

Body elongate, evenly broad or slightly widened posteriorly (Subgen. Pachygluta); the head somewhat porrect, but not constricted behind; the eyes in our species normally large, but little protruding; temples and genae more or less distinctly marginate; antennae very little longer than head and pronotum together, feebly thickened distally; maxillary palpi rather elongate, their third joint a little longer than the second, on inner side feebly ventose-like thickened, the fourth particularly small, spiculiform; the tongue very narrow, rounded at tip and not divided (cf. Fig. 92). Labial palpi normally three-jointed with joints of almost equal length.

Pronotum scarcely as broad as elytra, posteriorly slightly narrowing, with obtuse angular or rounded hind corners, the sides without erect bristles, anteriorly strongly roundly deflected; elytra longer than pronotum or only of same length as this, their posterior margin (in our species) inside the outer corners incurved; abdomen of equal breadth, in one of our species (ruficollis) however somewhat widened posteriorly; its first three free dorsal joints transverse-grooved depressed at base, the fifth a little longer than the fourth; the legs rather slender; fore- and middle-tarsi 4-jointed, hind tarsi 5-jointed and first joint of these as long as the following two joints together. - Especial sex-characters are not found in ♂.

In Denmark only 3 species are found, which live under the bark of infested deciduous and pinaceous trees, where they and their larvae probably feed on the young of the bast-borers. Many other species are found in South Europe partly under stones and damp leaves; most of these are wingless and with very short elytra.

Key to Subgenera and Species.

1. Abdomen equally broad. Elytra longer than pronotum. 1. Subg. Leptusa
s. str. 2.
- Abdomen broadened posteriorly. Elytra not longer than pronotum: 2.
Subg. Pachygluta Thoms. - Pronotum yellow-red. L. 2.5 mm.
..... 3. L. ruficollis Er.
2. Pronotum about as broad as elytra. Body brown or pitch-brown, abdominal tip reddish. L. 2.5-3.5 mm. 1. L. angusta Aube.
- Pronotum distinctly narrower than elytra. Body black or pitch-black; abdominal tip most often clear yellow-red. L. 2.5-3 mm.
..... 2. L. haemorrhoidalis Heer.

1. Subgenus Leptusa s. str.

1. L. angusta Aube.

(Aubé Ann. Soc. Ent. Fr. 1850, 310; Ganglb. Käf. M. II, 274. - analysis Gyllh. Ins. Suec. II, 388; Erichs. Gen. Spec. Staph. 154; Kraatz Ins. D. II, 62; Thoms. Skand. Col. II, 275; Muls. et Rey Brévip. 1871, 180).

Evenly broad, rather narrow and cylindrical; easily recognized by the color and proportionately broad, rather convex pronotum.

Brown or pitch-brown, dully glistening, very finely haired; head and

the next-last abdominal joints pitch-black; abdominal tip reddish; antennae, mouth-parts and legs red or yellowish-red.

Forebody particularly densely and finely shagreened in surface and therefore with dull shine; the head somewhat narrower than pronotum, indistinctly punctated; antennae feebly thickened distally, their third joint scarcely as long as the second, the fourth as long as broad, the following feebly increasingly transverse, so that the next-last become about twice as broad as long; distal joint oviform, tapering. Pronotum at middle as broad or about as broad as elytra, $1\frac{1}{2}$ times as broad as long, anteriorly and posteriorly feebly narrowing, with anteriorly strongly deflected, rounded sides and with obtuse angular hind corners, rather convex, with especially fine and rather dense punctation, and with a small transverse fovea posteriorly before scutellum, sometimes with a feeble medial groove; elytra distinctly longer than pronotum, with dense and rather fine scabrous punctation, their posterior margin inside the outer corners rather deeply incurved; abdomen equally broad, anteriorly with dense and rather fine, posteriorly more isolated and finer punctation. L. 2.5-3.5mm.

In the ♂ The elytra nearest the suture with a feeble longitudinal fold, fifth free dorsal joint of abdomen at medial-line with a fine, sometimes split longitudinal carina, the sixth with a small oblong granule; posterior margin of the sixth joint rounded, indistinctly serrate and with a small incision in tip.

Distributed in North and Central Europe; in this country rather rare and local, more frequent in northern Jutland than southward and in the islands; under bark of stubs and stems of infested oak, beech and pinaceous trees.

2. L. haemorrhoidalis Heer.

(Heer Faun. Helv. I, 332; Langlb. Käf. M. II, 275. - fumida Erichs. Gen. Spec. Staph. 156; Kraatz Ins. D. II, 63; Thoms. Skand. Col. II, 275; Muls. et Rey Brévip. 1871, 184).

A little smaller and less convex than angusta, and with narrower pronotum, furthermore identifiable by the color.

Black or pitch-black, rather glistening and finely haired; abdominal tip reddish-brown or pure yellow-red; antennae brownish, their base, the mouth-parts and legs reddish-yellow.

The head extremely finely, pronotum and elytra less finely shagreened in surface; head narrower than pronotum, very finely and rather densely punctated; antennae feebly thickened distally, finer than in angusta, their third joint as long as, but thinner than the second, the fourth as long as broad, the middle ones feebly, the next-last (7-10) distinctly transverse, about twice as broad as long; distal joint ovately tapering. Pronotum distinctly narrower than elytra, fully 1½ times as broad as long, posteriorly feebly narrowing, anteriorly with strongly deflected, rounded, posteriorly more straight sides and with obtuse angular hind corners, slightly convex, very finely and densely punctated and with a feeble, small fovea posteriorly before scutellum; elytra ⅓ longer than pronotum, with dense and distinct scabrous punctation, their posterior margin inside the outer corners strongly incurved; abdomen equally broad, anteriorly with fine and not dense, posteriorly finer and rather scattered punctation. L. 2.5-3 mm.

In the ♂ the fifth free dorsal joint of abdomen with a fine, short carina at middle, the sixth with a still finer carina and at tip slightly incurved.

Distributed as the preceding species, but in this country everywhere in woodland regions more common than this; under the bark of stumps and trunks of infested trees, both deciduous and pinaceous, also in debris under fagot.

2. Subgenus Pachyluta Thoms.

3. L. ruficollis Er.

(Erichs. Gen. Spec. Staph. 155, Kraatz Ins. D. II, 64; Thoms. Skand. Col. II, 276; Muls. et Rey Brévip. 1871, 280; Ganglb. Käf. M. II, 278).

Easily identified by particularly short elytra, posteriorly widened abdomen and by the color of pronotum.

Pitch-black, sparsely and finely haired, glistening; pronotum red or yellow-red; abdominal tip brownish- or reddish-yellow; antennae brownish, their base and tip, mouth-parts and legs reddish-yellow. In teneral animals the foremost abdominal joints are brownish-red or reddish-yellow, and the antennae sometimes also brownish.

The head is narrower than pronotum, with rather fine and flat, but not dense punctation; antennae at base and middle rather fine, slightly thick-

ened toward the tip, their third joint a little shorter and finer than the second, the next-last (6-10) distinctly, increasingly transverse, amply $1\frac{1}{2}$ times as broad as long, distal joint short, obtuse tip. Pronotum before the middle nearly as broad as elytra, $1\frac{1}{2}$ times as broad as long, slightly narrowing posteriorly and with rounded, obtuse hind corners, feebly convex, punctated like the head, occasionally with a feeble transverse fovea posteriorly before scutellum; elytra only as long as or shorter than pronotum,

with rather robust, but not dense scabrous punctation, at middle from the side more or less impressed; their posterior margin inside the outer corners feebly incurved; abdomen smoothly broadened posteriorly, its foremost dorsal joints with fine and scattered, the hindmost simple punctation. L. 2.5 mm.

In the ♂ the elytra at middle from side more strongly impressed than in the ♀ and thereby distinctly carina- or fold-like elevated along the suture. The fifth and sixth free dorsal joints of abdomen each with a fine carina at medial line.

Distributed everywhere in North and Middle Europe. In Denmark it is common in forests, larger gardens and parks under loose bark of deciduous and pinaceous trees, often also in debris under fagot, more rarely in ant hills.

33. Genus Phytosus Curt.

(Curtis Brit. Ent. XV, 1838, pl. 718; Erichs. Gen. et Spec. Staph. 177; Kraatz Ins. D. II, 41; Thoms. Skand. Col. IX, 207; Muls. et Rey Brévip. 1871, 291; Ganglb. Käf. M. II, 285).

By shape of the body and short elytra Phytosus comes close to the preceding subgenus (Pachygluta) of Leptusa; but in other aspects the species are reminiscent of certain Trogophloeus species, with which they also have common mode of living, inasmuch as their body structure is equipped for digging in sand. Among the Bolitocharina species they are especially notable by strongly spiniferous fore- and middle-tibiae.

Body narrow, elongate, densely haired; head large, porrect, not constricted behind, with rather small, flat eyes and finely margined temples and

genae; antennae short, robust, only their first joint elongate, the second a little shorter than the first, and feebly curved at base, so that while digging the antennae can bend backward; the third is very small, only $1/3$ as long as the second, short, roundly obconic, the following (4-10) increasingly transverse, so that the next-last joints become twice as broad as long; the distal joint short oval. The structure of mouth-parts are in Phytosus similar to those of Leptusa, namely the tongue is likewise narrow and undivided at tip (cf. Fig. 92).

Pronotum is anteriorly as broad as elytra, but hardly broader than the head, about as broad as long, distinctly narrowing posteriorly, with anteriorly rounded, and posteriorly almost straight sides, hind corners obtuse angular; -----(Page 253)----- elytra sometimes shorter than pronotum, or at most a little longer than this, together broadly incurved posteriorly; abdomen elongate, often feebly broadened posteriorly, its first four free dorsal joints transverse-grooved depressed at base, and the fifth $1\frac{1}{2}$ times as long as each of the preceding, equally long joints; legs short; the fore- and middle-tibiae in outer margin armed with 1-2 rows of robust spines;*) tarsi and tarsal joints short, fore- and middle-tarsi 4-jointed, only hind tarsi 5-jointed, and first joint of these a little longer than the second; claws short, but robust.

The species live on sandy ocean beaches, where they root in the sand under stones, seaweed and small carrion. In this country 2 species are found, a third on the coasts of Holland and France; it might possibly also be found here. - At high tide they dig themselves down into the sand to avoid being washed away.

Key to Subgenera and Species.

- 1 Elytra as long as, or a little longer than pronotum: 1. Subg. Phytosus
s. str. - Pronotum and elytra as well as the rest of the body
black. L. 2.5 mm.....1. Ph. spinifer Curt.
- Elytra shorter than pronotum: 2. Subg. Actosus Muls. - Pronotum and
elytra yellow, head and abdomen occasionally dark.....2.
2. Species small. L. 2-2.5 mm.....2. Ph. balticus Kr.
- Species larger. L. 2.5-3 mm.....3. Ph. nigriventris Chevr.

1. Subgenus Phytosus s. str.

1. Ph. spinifer Curt.

(Curtis Brit. Ent. XV, pl. 718; Erichs. Gen. Spec. Staph. 178 ex parte;
Kraatz Ins. D. II, 44; Muls. et Rey Brévip. 1871, 294; Ganglb. Käf. M. II, 287).

Recognized by the color, and in regard to the following species also
by, that it is winged and with a little longer elytra.

Black; forebody densely gray-haired, dull, abdomen more sparsely hair-
ed and feebly glistening; elytra posteriorly and at the suture reddish;
antennae, mouth-parts and legs brownish-yellow, femora often darker.

The body elongate and of equal breadth; head, pronotum and elytra ex-
tremely finely and densely punctated, as well as the antennae in detail
formed as set forth in the generic description. Pronotum sometimes with
feeble medial groove, and elytra as long as, or a little longer than pro-
notum, evenly broad. Abdomen equally broad or only indistinctly broadened
posteriorly, densely and very finely, yet distinctly punctated. L. 2.5 mm.

In the ♂ the posterior margin of fifth ventral joint of abdomen slight-

ly incurved, at middle, and the sixth a little prolonged with obtuse angular tip.

Distributed at the coasts of France, Holland, England and Denmark; in this country very rare and seemingly local, on sandy strand under seaweeds and stones. (Søndervig in Holmland; Adserbo on the northern coast of Zealand; Bøtø, Falster).

2. Subgenus Actosus Muls.

2. Ph. balticus Kr.

(Kraatz Berl. Ent. Zeitschr. 1895, 52; Thoms. Skand. Col. IX, 207; Muls. et Fey Brévip. 1871, 304; Ganglb. Käf. M. II, 287. - nigriventris Kraatz Ins. D. II, 43).

About of same size as spinifer, lighter in color and with much shorter elytra; wingless.

Yellow-red or brownish-yellow, densely grayish-yellow haired; forebody dull, abdomen feebly glistening; the head and the abdominal middle joints reddish-brown or pitch-black; sometimes abdomen is entirely pitch-black with brownish-red tip.

Head, pronotum and elytra particularly finely and very densely punctated; head as broad as pronotum, this posteriorly distinctly narrowing with feebly incurvate sides, medial line sometimes feebly grooved or slightly depressed; elytra $\frac{1}{3}$ shorter than pronotum and almost narrower than this anteriorly, their sides parallel; abdomen elongate, posteriorly distinctly broadened, densely and finely punctated. L. 2.5 mm.

In the ♂ the fifth ventral joint of abdomen flatly emarginate posteriorly, and the sixth slightly prolonged, the tip obtuse angular.

Distributed at the coasts of the North Sea and the Baltic Sea on sandy beaches, under seaweed and stones; found here and there in this country and less rare than spinifer, (Skagen, Esbjerg, Hornbaek, Bøtø, Dueodde in Bornholm et al.) sometimes in company with spinifer.

3. Ph. nigriventris Chevr.

(Chevrol. Rev. Zool. 1843; Muls. et Pey Brévip. 1871, 307; Ganglb. Käf. M. II, 288).

From balticus, which it resembles in regard to color and length of elytra it is separated by the following details:

It is considerably larger, lighter yellow or pale yellow, entirely dull; the head brownish-red or black, the middle joints of abdomen black; third joint of the antennae a little longer than in balticus, about half as long as the second; elytra almost only half as long as pronotum, posteriorly feebly broadened and here fully as broad as the pronotum anteriorly; abdomen posteriorly feebly broadened, to the tip with fine and extremely dense granulate punctation and therefore dull. L. 2.5-3 mm.

In the ♂ the posterior margin of fifth ventral joint of abdomen incurved at middle, and the sixth at tip obtuse-angularly prolonged. (t. Ganglb.).

Distributed at the coasts of Holland and North France on sandy shores, especially under carrion. Is heretofore not found in this country, but is not improbable, particularly on the strand along our western coast.

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34. Genus Silusa Er.

(Erichs. Käf. Mk. Br. I, 377; Gen. Spec. Staph. 205; Kraatz Ins. D. II, 44; Thoms. Skand. Col. II, 208; Muls. et Pey Brévip. 1871, 146; Ganglb. Käf. M. 288).

Body rather equally broad, smoothly convex; the head narrower than pronotum, somewhat imbedded in this and scarcely constricted behind; eyes round and a little protruding, temples and genae sharply margined; antennae rather robust, but scarcely longer than head and pronotum together; maxillary palpi somewhat elongate, their fourth joint fine and very little shorter than the third; labial palpi (Fig. 92) porrect, stiff, only two-jointed, the joints equally long and the last joint feebly curved; the tongue fine, narrow and at tip undivided (as in Leptusa).

Fig. 92. Labium with labial palpi and tongue of Silusa. (t. Reitter).

Pronotum strongly transverse, twice as broad as long, about as broad as elytra, not narrowing posteriorly, sides smoothly rounded, hind corners obtuse-angular and posterior margin inside these more or less distinctly incurved; elytra longer than pronotum, their posterior margin inside the outer corners rather deeply incurved; abdomen evenly broad, its first three free dorsal joints depressed at base, the fifth not longer than the fourth, the legs rather slender; fore- and middle-tarsi 4-jointed, only hind tarsi 5-jointed, and the first four joints of these about equally short, distal joint as long as the first three together. - In the ♂ distinct sex-characters are present.

The species occur at outflowing tree-sap and under bark; of the few known European species, one is found in this country.

1. S. rubiginosa Er.

(Erichs. Käf. Mk. Br. I, 378; Gen. Spec. Staph. 206; Kraatz Ins. D. II, 47; Thoms. Skand. Col. IX, 280; Muls. et Pey Brévip. 1871, 153; Ganglb. Käf. M. II, 290).

In shape not unlike Crataegus suturalis, but somewhat larger and more robust, of rather equal breadth, and in combination with the generic characters as set forth above, furthermore easily identified by the color and the sex-characters of the ♂.

Black or brownish-black, finely yellowish haired and somewhat glistening; pronotal sides reddish-brown; elytra brownish-red, around scutellum and oftenest also across hind corners obliterate pitch-brown or pitch-black; antennae brown, their base, mouth-parts and legs yellow-red. In teneral animals abdomen at base brownish-red.

The head broad, finely and densely punctated; antennae robust, their second and third joints about of same length, the fourth not broader than

long, the following (5-10) feebly increasing transverse, the next-last about twice as broad as long, distal joint long oval, tapering. Pronotum (see above) is as broad as elytra, smoothly convex, finely and densely punctated and posteriorly with a small transverse fovea before scutellum; elytra with rather robust and very dense scabrous punctation; abdomen rather robust and anteriorly densely punctated, posteriorly with more scattered punctation, its sides particularly hindwards distinctly bristle-haired.

L. 3.5-4 mm.

In the ♂ the elytral suture posteriorly finely carina-shaped; the fifth free dorsal joint of abdomen at medial line with a rather robust carina, the sixth with a much finer carina, and posterior margin finely, yet distinctly serrate.

Distributed in Middle Europe; rare in this country; at outflowing tree-sap, especially of elm. (Frederiksvaerk, Boserup, Nykøbing F., Assens, Als et al. - also in Skaane (Thoms)).

A closely allied species, S. rubra Er. is distributed in Central Europe. It is vivid brownish-red with darker, often pitch-black head and abdomen. Hind corners of pronotum strongly defined, almost rectangular. In the ♂ the fifth free dorsal joint of abdomen with two parallel longitudinal carinae at middle, and the sixth at posterior margin with a row of small acute teeth, of which the outer one on each side is longest. l. 3.5-4 mm.

It lives especially in fungi, reported as not rare (Ganglb.) and may possibly also occur in this country.

35. Genus Euryusa Er.

(Erichs. Käf. Mk. Br. I, 371; Gen. Spec. Staph. 199; Kraatz Ins. D. II, 71; Muls. et Pey Brévip. 1871, 158; Ganglb. Käf. M. II, 269. - Tharissoma Thoms. Skand. Col. II, 278).

From Leptusa, with which Euryusa agrees in structure of mouth-parts, it is easily separated by the much broader and flatter shape of the body, by a peculiarly broad pronotum, as broad as or broader than elytra. These inside of the outer hind corners are deeply incurved. First joint of hind tarsi as long as the two following joints together.

The species live principally in company with certain ants (Lasius brunneus and niger), mostly in old hollow trees. Of the few Middle European species none are heretofore found in Denmark, but a single one in Skaane. This is here briefly described.

1. E. castanoptera Kr.

(Kraatz Ins. D. II, 76; Muls. et Pey Brévip. 1871, 172; Ganglb. Käf. M. II, 270. - laticollis Thoms. Skand. Col. II, 270).

In form and color not unlike Silusa rubiginosa, but smaller and in relation to this easily identified by the unicolorous chestnut color of elytra, by the dense punctation of head and pronotum, also by the sex-characters of the ♂. ---- (Page 257)----

Black, finely and sparsely haired, rather glistening; pronotal sides most often brownish-red; elytra chestnut colored; antennae brown, their base, mouth-parts and legs brownish-red.

Pronotum as broad as or somewhat shorter than elytra, with very dense and rather robust punctation, a little more densely and finely punctated than elytra, the sides rounded and posterior margin inside the roundly obtuse angular hind corners strongly incurved. Abdomen right to the tip with very dense, rather fine and smooth punctation. L. 3-3.5 mm.

In the ♂ the fifth free dorsal joint with a longitudinal carina at middle, the sixth with a finer carine and incurved at tip. (t. Ganglb. and Kraatz).

Distributed throughout North and Middle Europe; found at Pingsjön in Skaane at outflowing tree-sap (Thoms.). May possibly be encountered in this country.

36. Genus Epipeda Muls. et Pey.

(Muls. et Pey Brévip. 1871, 136. - homalota, Thoms. Skand. Col. II, 284; Ganglb. Käf. M. II, 291).

Body elongate, rather equal breadth and flat or depressed; head broad, with normally large, somewhat protruding eyes, somewhat narrowing behind,



but hardly constricted; temples and genae finely margined; antennae rather short; maxillary palpi likewise, their fourth joint small and very fine, about half as long as the third; labial palpi two-jointed; tongue cleft at tip.

Pronotum feebly narrowing posteriorly narrower than elytra, these a little longer than same, evenly broad, together as broad as long; abdomen of equal breadth, its first four free dorsal joints transverse-grooved depressed at base, the fifth longer than the fourth; legs rather short, fore- and middle-tarsi 4-jointed, and hind tarsi 5-jointed; first four joints of hind tarsi equally short, their distal joint as long as the first three joints together.

The one to this genus belonging species is by Erichson, Kraatz, Sharp et al. included in the genus Homalota Mannh., but must, on account of the 4-jointed fore- and middle-tarsi, here be placed in division Bolitocharina. In Thomson et al. the generic name Homalota is limited to this species alone; - a few other closely allied species are found in North America. They live under bark in larvae-burrows and crumblings.

1. E. plana Gyllh.

(Gyllh. Ins. Suec. II, 402; Erichs. Käf. Mk. Br. I, 700; Gen. Spec. Staph. 93; Kraatz Ins. D. II, 250; Thoms. Skand. Col. II, 285; Sharp Rev. Brit. Hom. 167; Muls. et Rey Brévip. 1871, 139; Ganglb. Käf. M. II, 292).

Black, finely haired; forebody with feeble gloss, abdomen especially posteriorly rather glistening; elytra and most often also abdominal tip brown or brownish-red; -----(Page 258)----- antennae pitch-brown with lighter base; mouth-parts and legs brownish-yellow, femora most often somewhat



darker. In teneral animals color of body is brownish, only the head and a band before abdominal tip pitch-black.

Head, pronotum and elytra in surface particularly finely shagreened and therefore with dull shine; the head only a little narrower than pronotum, rather densely and robustly punctated; antennae rather short and robust, their third joint shorter than the second, the fourth small, rounded, the middle and next-last joints transverse, approximately twice as broad as long, distal joint short, oval. Pronotum anteriorly a little narrower than elytra, a little broader than long, somewhat narrowing posteriorly and with obtuse angular, yet distinct hind corners, very flatly convex, particularly finely and densely punctated, with slight medial groove; elytra $1\frac{1}{3}$ longer than pronotum, punctated as this, their posterior margin inside the outer corners scarcely incurved; the foremost dorsal joints of abdomen very finely and rather densely punctated, the hindmost with single punctation or almost smooth. The middle and hindmost tibiae each with an erect bristle. L. 2.5-3 mm.

In the ♂ the fifth free dorsal joint of abdomen with a small sharp granule at middle, the sixth with a sharp, slightly curved line at each side and at tip evenly truncated or feebly emarginate. (t. Ganglb. and Kraatz).

Under bark of deciduous and pinaceous trees. Distributed in Middle Europe and also found in Skaane; it is possible that it may yet be discovered in Denmark, most likely in Bornholm.

37. Genus Thectura Thoms.

(Thoms. Öfv. Vet. Acad. Förh. 1858, 32; Skand. Col. II, 285; Muls. et Rey Brévip. 1875, 326; Ganglb. Käf. M. II, 292).



Our to this genus belonging species is by Thomson transferred from the genus Homalota Mannh. It is closely related to Epipeda plana, and like this, on account of 4-jointed fore- and middle-tarsi and 5-jointed hind tarsi, belongs to division Bolitocharina. Thectura is especially separated from Epipeda by, immarginate temples and genae and by shorter maxillary palpi, of which the third joint is very strongly thickened, the fourth fine and oviform; legs shorter and more robust.

Only 1 species is found in North and Middle Europe, which like Epipeda plana live under bark of trunks and stubs of deciduous and pinaceous trees, which are attacked by bark- and bast-borer, it and its larvae supposedly feed on the young of the borer.

1. T. cuspidata Erichs.

(Erichs. Käf. Mk. Br. I, 690; Gen. Spec. Staph. 96; Kraatz Ins. D. II, 253; Thoms. Skand. Col. II, 286; Sharp Rev. Brit. Hom. 168; Muls. et Rey Brévip. 1875, 328; Ganglb. Käf. M. II, 292).

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A very small, very flat, elongate, narrow and evenly broad species, easily identified by the shape, and by the peculiarly developed sixth free dorsal joint of abdomen.

Black, very finely haired, dully glistening; elytra and abdominal tip brown; antennae brownish, their base, the mouth-parts and legs brownish yellow. In teneral animals the body is brownish, and only the head and next-last abdominal joints entirely black.

Head as broad as pronotum, rather square with parallel sides, rounded off corners posteriorly, and small, slightly convex eyes, distinctly but not densely punctated, together with pronotum and elytra the surface is

finely shagreened; antennae short and robust, their first two joints thick, the third obconic and smaller than the second, the middle and next-last (4-10) increasingly transverse and these more than twice as broad as long, distal joint short. Pronotum a little narrower than elytra, anteriorly a little broader than long, feebly narrowing posteriorly, with rounded off hind corners, extremely fine isolated punctation, medial line slightly grooved and at middle more or less broadly depressed; elytra $1\frac{1}{2}$ times as long as pronotum, particularly finely and densely punctated, their posterior margin inside the outer corners not incurved; abdomen of equal breadth, its first four free dorsal joints depressed at base and with rather fine, scattered punctation, the following almost impunctate. The sixth is, peculiar for this species, at tip divided into three spines, of which the middle one is longest. L. 1.5 mm.

In the ♂ the second, third and fourth free dorsal joints of abdomen at each side on dorsum with a small acute granule (Fig. 93). Pronotal longitudinal impressions are more distinct and the middle spine of the sixth tergite much longer than in the ♀.

Distributed in all our forest regions and not rare under bark on infested trees and stubs, but easily overlooked.

38. Genus Placusa Er.

(Erichs. Käf. Mk. Br. I, 370; Gen. Spec. Staph. 194; Kraatz Ins. D. II, 329; Thoms. Skand. Col. III, 101; Muls. et Pey Brévip. 1871, 103; Ganglb. Käf. M. II, 294).

Body short, most often rather broad, more or less flat; head transverse, but narrower than pronotum, scarcely constricted behind; eyes large, convex;



temples and genae finely margined; antennae short, robust, their outer joints strongly transverse; maxillary palpi rather slender, their last joint fine, spiculiform, only half as long as the third; labial palpi only two-jointed; the tongue very short and broad, rounded at tip.

Pronotum broad, as broad as or a little narrower than elytra, its posterior margin inside the obtuse-angular corners most often slightly incurved; abdomen flat, feebly tapering, its first three free dorsal joints very narrowly transverse-grooved depressed at base, the fifth longer than the fourth; the sixth in the ♂ with sex-characters; legs rather short and not robust; fore-tarsi and middle-tarsi 4-jointed, only hind-tarsi 5-jointed and first joint of these elongate, almost as long as the following three joints together, as long as the claw-joint.

The species, which at a casual glance mostly resemble Homalota species, live under the bark of deciduous and pinaceous trees, which are infested with bark- and bast-borers, the young of these presumably serve as food for the species and their larvae. In Middle and North Europe 6 species are known, of which only 2 are heretofore found in Denmark, but as it is not unlikely that several more may be found here, 3 of these are included in the following.

Key to the Species.

1. Head and pronotum entirely dull..... 2.
- Head and pronotum rather glistening..... 3.
2. Posterior margin of pronotum very finely marginated, its hind corners roundly obtuse-angular. L. 2-2.5 mm.....1. Pl. humilis Er.



2. Posterior margin of pronotum not margined, its hind corners less rounded. L. 2.5 mm.....2. Pl. complanata Er.
3. Posterior margin of sixth free tergite in the ♂ at middle with a triangular tooth, and at each side with an equal long, fine spine. L. 2 mm..... 3. Pl. pumilio Er.
- Posterior margin of sixth free tergite in the ♂ at middle with three-five small teeth and at each side a little longer, slightly inwardly curved spine, on dorsal side furthermore with two small granules. L. 2-2.5 mm.....4. Pl. tachyporoides Waltl.
- Posterior margin of the sixth free tergite in the ♂ at middle with three thorn-shaped teeth and at each side a little longer spine, which is curved inwardly, both fifth and sixth tergite on dorsal side with two small granules. L. 2 mm..... 5. Pl. atrata Sahlb.
1. Pl. humilis Er.

(Erichs. Gen. Spec. Staph. 196; Kraatz Ins. D. II, 332; Thoms. Skand. Col. III, 103; Muls. et Rey Brévip. 1871, 114; Ganglb. Käf. M. II, 296).

A rather broad and flat species, and in combination with form of the body principally identified by the entirely dull head and pronotum, and the finely yet distinctly margined posterior margin of the latter.

Black, very finely, rather densely gray-haired, dull, abdomen with greasy gloss, the elytra yellowish-brown, at base and on sides most often dark; antennae pitch-brownish, their base, the mouth-parts and legs brownish yellow.

Head and pronotum particularly densely and finely punctated, shagreened in surface and therefore dull; the head broad, yet considerably narrower



than pronotum; antennae short, thickened distally, their third joint shorter and finer than the second, the fourth small, rounded, the middle and next-last joints distally increasingly transverse, so that the last ones become twice as broad as long, distal joint short, oval, obtuse tip.

Posteriorly pronotum is about as broad as elytra, more than twice as broad as long, slightly narrowing anteriorly, with slightly rounded sides and roundly-obtuse hind corners, posterior margin very finely, sufficiently magnified, yet distinctly margined, inside corners flatly incurved; dorsum flatly convex and smooth; elytra $\frac{1}{3}$ longer than pronotum, flat, with very dense and fine scabrous punctation, posteriorly about evenly truncated; abdomen particularly to the fore very densely and finely punctated, hindward with less dense, but finer punctation. L. 2-2.5 mm.

In the ♂ the sixth free dorsal joint of abdomen posteriorly at middle unevenly angulate, with knot-shaped thickened tip, and at each side with a longer, thin, feebly inwardly curved spine. (Fig. 94).

Distributed in North and Middle Europe, but everywhere very rare; in this country heretofore only found in the woods at Hillerød under bark of pine, which was impaired by Tomicus typographus (Author 7. 02).

2. Pl. complanata Er.

(Erichs. Gen. Spec. Staph. 104; Kraatz Ins. D. II, 331; Thoms. Skand. Col. III, 102; Muls. et Rey Brévip. 1871, 108; Faglb. Käf. M. II, 295).

Much like the preceding species, but generally a little larger. Pronotum at middle slightly depressed and sometimes with two feeble longitudinal impressions, posterior margin immarginate, hind corners more defined and the curve inside these somewhat more distinct than in humilis; sex-

characters of the ♂ same as in this. L. 2.5 mm. (cf. Ganglb., Kraatz).

Distributed in Middle and North Europe, under bark of infested pineous trees; but heretofore not discovered in this country.

3. Pl. pumilio Gravh.

(Gravh. Micr. 98, Erichs. Gen. Spec. Staph. 198; Kraatz Ins. D. II, 331; Thoms. Skand. Col. 101- subaepressa and similata Muls. et Rey Brévip. 1871, 217 and 124).

A little smaller than humilis, but more convex and with distinctly glistening head and pronotum.

Black, finely haired, rather glistening; elytra brown or yellow-brown; antennal base, mouth-parts and legs brownish-yellow.

Head and pronotum very finely and densely punctated; the latter distinctly narrower than elytra, twice as broad as long, anteriorly roundly narrowed, hind corners less rounded-off than in humilis, posterior margin as in this finely margined, at each side feebly incurved; dorsum slightly

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convex; elytra scarcely $1\frac{1}{2}$ times as long as pronotum, with fine and dense scabrous punctation; abdomen to the tip with very dense and very fine punctation. L. 2 mm.

In the ♂ the posterior margin of the sixth free dorsal joint of abdomen at middle with a triangular tooth and at each side with an acute spine, which is not extending beyond the middle tooth. (t. Ganglb.).

Said mainly to live under bark of infested oak and fir trees, but is heretofore not found in this country, contrariwise found in Skaane (Thoms.).



4. Pl. tachyporoides Waltl.

(Waltl Isis 1838, 268; Ganglb. Käf. M. II, 296. - infima Erichs. Gen. Spec. Staph. 196; Kraatz Ins. D. II, 333; Thoms. Skand. Col. III, 102; Muls. et Rey Brévip. 1871, 120).

In size like humilis, but more convex; head and pronotum distinctly glistening; further recognizeable by the punctation of abdomen and the sex-characters of the ♂.

Black, finely haired, rather glistening; elytra yellow-brown or brownish-yellow; antennae brownish pitch, their base, the mouth-parts and legs brownish-yellow.

Head and pronotum densely and very finely punctated; antennae same as in humilis. Pronotum a little narrower than elytra, about twice as broad as long, rather strongly roundly narrowing anteriorly, convex, without impressions, posterior margin finely margined, inside the obtuse-angular corners slightly incurved; elytra $\frac{1}{3}$ longer than pronotum, slightly convex, feebly broadened posteriorly, punctation fine, dense and scabrous; abdomen entirely with very fine and particularly dense punctation, and due to this with less shine than the forebody, dully glistening. L. 2-2.3 mm.

In the ♂ the sixth free dorsal joint of abdomen on dorsal side with two small granules, posterior margin with three-five small teeth of equal length and at each side a longer, acute, slightly inwardly curved spine.

Distributed throughout the greater part of Europe; in this country apparently very rare, and heretofore only found singly in the vicinity of Sorø. Said not to be rare in Skaane under bark of infested deciduous trees (Thoms.).

5. Pl. atrata Sahlb.

(Sahlb. Ins. Fenn. I, 375; Erichs. Gen. Spec. Staph. 198; Ganglb. Käf. M. II, 296. - nitidula Thoms. Skand. Col. III, 103).

Pitch-black, finely haired, rather glistening; elytra darkly brown, antennal base, mouth-parts and legs brownish-yellow.

It deviates from the preceding species by darker elytra, and also by more finely and densely punctated abdomen, and by slightly diviating sex-characters of the ♂, inasmuch as also the fifth free tergite as well as the sixth has two small granules on dorsal side. L. 2 mm.

— (Page 263) —

Distributed in North and Middle Europe, and is (t. Thoms.) found in northeastern Skaane; so it is not unlikely that it might be found under bark of attacked deciduous and pinaceous trees also in this country.

39. Genus Gyropheena Mannh.

(Mannerh. Brach. 74; Erichs. Käf. Mk. Br. I, 365; Gen. Spec. Staph. 182; Kraatz Ins. D. II, 352; Thoms. Skand. Col. II, 266; Muls. et Rey Brévip. 1871, 17; Ganglb. Käf. M. II, 297).

Gyrophæenids, which also include the two following genera, are separated from the rest of the Bolitocharids principally by: that the middle-coxae are rather broadly separated, and that the tip of mesosternum between the coxae is not tapering, but broadly truncated and sometimes slightly emarginate. They are further distinguished by a peculiar exterior, which serves as an easy generic identification character; the special characters of genus Gyrophæena are further denoted in the following: (Fig. 95)

Body short, rather broad and flat, most often with variegated color, and



most often strongly glistening, either naked or extremely sparsely haired. The head short, in most of the species roundly transverse, with large protruding eyes, posteriorly strongly narrowing, only on the sides with rather coarse punctation, in some species not broader than long, with less protruding eyes and behind these feebly narrowing. Temples and genae finely margined; antennae rather short, their third joint much finer and shorter than the second, the fourth small, the middle and next-last joints (5-10) most often of equal breadth and strongly transverse, more rarely as long as broad, distal joint oval. Of the mouth-parts the maxillary palpi are short, their fourth joint small and spiculiform, hardly as long as the third; labial palpi two-jointed, the tongue small and most often undivided at tip, only in subg. Azaricochara is the tongue cleft.

Pronotum short, most often twice as broad as long, broader than the head, but narrower than the elytra, with rounded sides, rounded fore- and hind-corners and arcuate posterior margin, the sides very finely, posterior margin most often more distinctly margined, dorsum slightly convex, in most of the species with two longitudinal rows of larger punctures, and otherwheres either smooth or with only simple punctation, in several species with uniformly fine punctation, without punctate rows. Elytra longer than pronotum, with protruding humeri and rather evenly truncated posterior margin, inside the outer corners not incurved; abdomen ordinarily short, dor-

sal side rather flat, robustly margined, its first three free dorsal joints depressed at base, ventral side convex; in running and at rest it is often

curved upward and forward. In the ♂ the fifth and sixth free dorsal joint with diversely formed sex-characters. The legs fine; fore- and middle-tibiae 4-jointed, only hind-tarsi 5-jointed, and the first joint of these $1\frac{1}{2}$ times as long as the second.

The species live in fungi, often in colonies. From Middle and North Europe 16 species are known, of which the majority are found in this country. - Several of the species are difficult to separate, and as in cases of uncertainty the sex-characters furnish the most definite identification marks, an abundance of specimens in both sexes is important for the determination.

Key to Subgenera and Species.

1. Head across the eyes much broader than long, back of eyes strongly narrowing, eyes strongly protruding: 1. Subg. Gyrophæna s. str.....2.
- Head across the eyes not broader than long, back of eyes not strongly narrowing, and eyes less protruding.....13.
2. Antennal middle and next-last joints (8-10) not or scarcely transverse; antennae rather slender..... 3.
- Antennal next-last five joints (6-10) very strongly transverse.....5.
3. Pronotum black, its posterior margin broadly set off and somewhat upwardly bent (the species comparatively large). L. 2.5-2.7 mm.....
.....3. G. nitidula Gyllh.
- Pronotum pitch-brown or yellow-red, its posterior margin narrowly set off:4.
4. Elytra indistinctly punctated. Antennae yellow, long. L. 2.5 mm.....
.....1. G. pulchella Heer.

4. Elytra with scattered, distinct punctation, surface **densely** shagreened.
Antennae shorter, brownish-pitch with yellow base. L. 1.5-2 mm.
.....2. G. affinis Sahlo.
5. Pronotum along the middle with two more or less complete longitudinal rows of punctures, which each begins posteriorly with a large, deep puncture, outside these rows with simple punctation.....6.
- Pronotum without such punctate rows, but most often with the two larger punctures posteriorly, elsewhere with irregular or scattered punctation.....11.
6. Abdomen entirely black; elytra extremely finely and sparsely punctated, almost smooth. L. 1.3 mm.....9. G. lucidula Er.
- Abdomen reddish yellow with a black transverse band before the tip...7.
7. Elytra with dense and rather coarse, posteriorly rugose punctation...8.
- Elytra with scattered, fine or very fine punctation, distinctly punctated toward hind corners, anteriorly sometimes almost smooth....9.
8. Pronotum black or black-brown with light posterior margin and hind corners; its sides strongly rounded. L. 2mm..... 4. G. nana Er.
- Pronotum pitch-brown or brown-red, its sides feebly rounded. L. 2.5 mm.
.....5. G. gentilis Er.
9. Pronotum red-brown or brown-black. Elytra almost impunctate, smooth.
Fifth free dorsal joint of abdomen in the ♂ with a transverse row of four granules, the sixth free dorsal joint at posterior margin with two triangular teeth, separated by a small incision. L. 2 mm..... 8. G. laevipennis Kr.

9. Pronotum most often yellow-red or red-brown. Elytra, also anteriorly, finely punctated.....10.
10. Pronotal sides strongly rounded. Elytra with scattered and particularly fine punctation. Fifth free dorsal joint of abdomen in the ♂ posteriorly with a transverse row of four-six granules, the sixth posteriorly prolonged into two inwardly curved robust teeth or spines, separated by a broad incision. L. 1.8 mm.... 7. I. bihamata Thoms.
- Pronotal sides less strongly rounded. Elytra more densely and distinctly punctated. Fifth free dorsal joint of abdomen in the ♂ with a transverse row of six granules, margin of the sixth with a fine double-spine in middle and at each side with a longer, slender, inwardly curved tooth or spine. L. 1.5-2 mm...6. I. fasciata Mannh.
11. Pitch-black; humeri and tip of abdomen red-brown. Fifth free dorsal joint of abdomen in the ♂ without granules. L. 1.3 mm.:12. I. manca Er.
- Yellow or reddish-yellow; head, posterior corners of elytra and a transverse band before the abdominal tip black. Fifth free dorsal joint of abdomen in the ♂ with a transverse row of four granules.....12.
12. Elytra with very fine, yet (magnified) distinct, scattered granulate-punctation. Species very small. L. 1-1.2 mm..... 11. G. minima Er.
- Elytra rather densely acupunctate. L. 1.5 mm.....10. I. Poweri Crotch.
13. Tongue at tip entire and undivided. Pronotum either with two rows of punctures or uniformly scattered punctation: 2. Subg. Phaenogyra Muls..14.
- Tongue at tip cleft. Pronotum very indistinctly punctated, surface particularly finely shagreened: 3. Subg. Agaricochara Kr. - Elytra proportionately long. L. 1-.2 mm..... 16. G. laevicollis Kr.



14. Pronotum with two fine, slightly depressed rows of punctures at middle, elsewhere almost impunctate, but the surface slightly shagreened...15.
- Pronotum without punctate rows, but with uniformly fine and rather scattered punctation. L. 0.7-1 mm.....15. G. boleti L.
15. Antennal next-last joints feebly transverse. L. 1.3-1.5 mm...13. G. strictula F.
- Antennal middle and next-last joints strongly transverse. L. 1.2 mm...
..... 14. G. polita Gravh.

1. Subgenus Gyrophæna s. str.

1. G. pulchella Heer.

(Heer Faun. Helv. I, 310; Kraatz Ins. D. II, 356; Thoms. Skand. Col. IX. 229; Muls. et Rey Brévip. 1971, 25; Ganglb. Käf. M. II, 300).

Especially identifiable by comparatively long, slender antennae, which are longer than in any other of our species, by very fine or indistinct punctation of the elytra and the light color of these, also by the sex-characters of the ♂.

Reddish-yellow; head pitch-black or brown; pronotum feebly brownish at middle; elytra pale yellow, their hind corners and posterior margin, also an indefinitely bounded band before the abdominal tip obliterate black or pitch-brown; antennae and legs clear yellow.

The head on sides with scattered, large, but not deep punctation; antennae slender and considerably longer than head and pronotum together, their middle and next-last joints, especially the first (5-7) distinctly longer than broad. Pronotum much narrower than elytra, hardly twice as broad as long, posteriorly feebly narrowing, with anteriorly slightly rounded, pos-

teriorly straight sides, its dorsal side at middle with two longitudinal rows of few larger punctures, elsewhere with only simple and scattered punctation, posterior margin distinctly marginate; elytra amply $\frac{1}{3}$ longer than pronotum, with very fine and scattered or indistinct punctation; abdomen smoothly tapering, in the ♀ posteriorly with fine and dense punctation, in the ♂ almost smooth. L. 2.5 mm.

In the ♂ the fifth free dorsal joint of abdomen at middle of and before posterior margin with a small horseshoe-formed knot, open anteriorly, the sixth at middle with a deep, rounded incision, bounded on each side by a somewhat inwardly directed dentiform lobe (cf. Fig. 96).

Rare or local; in rotting fungi (Aarhus, Hinnerup, Frederits, Sorø et al.) North and Central Europe.

2. *J. affinis* Sahlb.

(Sahlb. Ins. Fenn. I, 383; Erichs. Gen. Spec. Staph. 184; Käf. Mk. Br. I, 368; Knechtz Ins. D. II, 357; Thoms. Skand. Col. II, 267; Muls. et Pey Brévip. 1871, 29; Ganglb. Käf. M. II, 300).

By rather slender, proportionately long antennae closely allied to the preceding species, from which it however is easily separated by the color, and by the punctation of elytra.

Pitch-black or pitch-brown with black head, glistening; pronotum red-brown; elytra brown-yellow or yellow-brown, their outer posterior corners often brownish-pitch; tip of abdomen brownish yellow, its foremost joints occasionally red-brown; antennae feebly brownish yellow, their base, mouth-parts, and legs yellow.

Head, pronotum and elytra finely reticulated in surface; the head on sides with scattered and coarse punctation; antennae shorter than in pulchella, however rather slender, their middle and next-last joints (5-10) as long as broad. Pronotum short, twice as broad as long, with slightly rounded sides and finely bounded posterior margin, its dorsum at middle with two, often indistinct, rows of punctures, elsewhere with very scattered, simple punctation; elytra a little longer than pronotum, with coarse, but not dense or deep punctation; abdomen smoothly tapering, the surface very finely reticulated, scarcely punctated. L. 1.5-2 mm.

In the ♂ the fifth free dorsal joint of abdomen (Fig. 96) with a small polished boss*) at middle before posterior margin, the sixth like that of the preceding species with a deep rounded incision, bounded on each side with a long, slightly inwardly curved tooth.

Distributed everywhere in North and Middle Europe, and not rare in this country; in fungi, especially in the autumn.

3. G. nitidula Gyllh.

(Gyllh. Ins. Suec. II, 413; Erichs. Gen. Spec. Staph. 183; Kraatz Ins. D. II, 354. Thoms. Skand. Col. II, 266; Muls. et Rey Brévip. 1871, 22; Ganglb. Käf. M. II, 301).

A comparatively large and broad, somewhat convex species, which in combination with the size is easily identified by rather slender antennae, and the color of pronotum and its broadly set off posterior margin.

Glistening black; elytra red- or brown-yellow, around scutellum dark and with a large, black spot on the outer hind corners; tip of abdomen and posterior margins of its joints yellow-brown; antennae black, their base, mouth-parts and legs yellow.

*) literally knot, trsl.

The head on sides with coarse, simple punctation; antennal middle and next-last joints (5-10) about of equal breadth and hardly broader than long. Pronotum more than twice as broad as long, the sides strongly rounded, posterior margin broadly set off and somewhat turned upward, dorsum convex, with two feebly depressed punctate rows at middle, and elsewhere with simple, coarse punctation; elytra somewhat longer than pronotum, with rather strong and dense, nearest hind corners scabrous punctation; abdomen smooth. L. 2.5-2.7 mm.

In the ♂ the fifth free dorsal joint of abdomen with a transverse row of six granules, posterior margin of the sixth at middle with two triangular teeth and at each side a longer inwardly curved tooth.

Heretofore apparently not found in this country, but as it is not rare in southern Sweden (Thoms.), it is not unlikely that it might be encountered here, most likely in Bornholm.

4. G. nana Payk.

(Payk. Faun. Suec. III, 408; Erichs. Käf. Mk. Br. I, 367; Gen. Spec. Staph. 184; Kraatz Ins. D. II, 357; Thoms. Skand. Col. II, 266; Muls. et Pey. Prévip. 1871, 47; Ganglb. Käf. M. II, 301).

A glistening, comparatively short and broad species with robust antennae, further identifiable by the color and the sex-characters of the ♂. (Fig. 95).

Head black, pronotum black or black-brown, its hind corners and posterior margin, often also the sides brownish-red or yellow-red; elytra reddish-yellow, the outer hind corners pitch-black; abdomen yellow-red, its two-three next-last joints pitch-black; antennae toward tip most often brownish yellow, elsewhere as the mouth-parts and legs yellow.

Head on the sides with simple and coarse punctation and the surface as well as that of pronotum not reticulate in surface, but smooth; antennae short and robust, their third joint very thin, the fourth very small, yet broader than long, the middle and next-last (5-10) about of equal breadth, strongly transverse. Pronotum twice as broad as long and much narrower than elytra, with strongly rounded sides and robustly bounded posterior margin, smoothly convex, dorsum with two, at middle interrupted longitudinal rows of punctures, elsewhere with only two or three single large punctures on sides and two small dense clusters of smaller punctures posteriorly before scutellum; elytra $\frac{1}{3}$ longer than pronotum, at base and nearest the suture with fine and scattered punctation, at middle and toward the outer hind corners with increasingly robust and dense, somewhat rugose punctation; abdomen broad, slightly rounded tapering, impunctate, the surface extremely feebly reticulated and somewhat less glistening than the forebody.

In the ♂ the fifth free dorsal joint of abdomen before posterior margin with a transverse row of six small longitudinal carinae, of which the outer one on each side most often is smaller, and the two middle ones are closer together than the rest; posterior margin of the sixth joint at middle with a tooth, often with cleft tip, and at each side an equally long, slightly inwardly curved spine or tooth.

Distributed in all our woodland regions, and not rare in fungi, especially in the autumn. North and Middle Europe.

5. G. gentilis Er.

(Erichs. Gen. Spec. Staph. 185; Kraatz Ins. D. II, 355; Muls. et Fey Brévip. 1871, 43; Ganglb. Käf. M. II, 302. - ? congrua Thoms. Skand. Col. II, 268).

One of the largest species, ordinarily somewhat larger than nana; closely allied to this, but with somewhat differently colored, shaped and punctated pronotum, and with other sex-characters in the ♂.

Head black; pronotum darkly brown or brown-red with lighter margins; elytra brownish or reddish yellow, hind corners obliterated black; abdomen yellow-red, its fourth, occasionally also a little of the third free dorsal joint black or pitch-brown; antennae, mouth-parts and legs yellow.

Head and pronotum extremely finely reticulated in surface; head on sides with simple, coarse punctation; antennae hardly as robust as in nana; pronotum twice as broad as long, with feebly rounded sides and distinctly bounded posterior margin, at middle with two longitudinal punctate rows and elsewhere punctated about as nana; elytra amply $\frac{1}{3}$ longer than pronotum, with dense, and toward the outer corners posteriorly rather robust rugose-punctation; abdomen impunctate. L. 2-2.5 mm.

In the ♂ the fifth free dorsal joint of abdomen (Fig. 97) before posterior margin with a transverse row of four small carina, of which the two middle ones are short, scarcely half as long as the others; the sixth joint in middle of posterior margin with two closely placed spines and at each side a longer, inwardly curved rather robust tooth or spine.

Rare or very rare; in fungi (Vang forest in Vendsyssel; Merrits forest, Falster). In Skaane rare (Thoms.). North and Middle Europe.

6. G. fasciata Marsh.

(Marsh. Ent. Brit. 514; Ganglb. Käf. M. II, 302. - congrua Erichs. Käf. Mk. Br. I, 368; Kraatz Ins. D. II, 358; Thoms. Skand. Col. II, 208. -carpini Muls. et Rey Brévip. 1871, 65).

Much like the following species (see same) from which it only is separated by, that the sides of pronotum are less rounded, and elytra more distinctly and densely punctated (however much finer and less densely than in nana); the sex-characters of the ♂ are also different. L. 1.5-2 mm.

In the ♂ the fifth free dorsal joint of abdomen with a transverse row of small carinae, posterior margin of the sixth at middle with a narrow, at tip divided tooth or a double spine, above this often with two granules, furthermore at each side with a longer inwardly curved tooth or spine.

Distributed in our woodland regions, and in the fall not rare in fungi. Middle Europe; Skaane.

7. G. bihamata Thoms.

(Thoms. Öfv. Vet. Acad. Förh. 1876; Skand. Col. IX, 230; Ganglb. Käf. M. II, 302. - despecta Muls. et Rey Brévip. 1871, 62).

Especially identified by the fine, isolated punctation of elytra, and by the sex-characters of the ♂.

Reddish-yellow; the head black or pitch-black; pronotum often brownish; outer hind corners of elytra and a band before abdominal tip black or brown-black; antennae toward tip most often brownish, elsewhere together with mouth-parts and legs yellow.

The head on sides with simple and coarse punctation; antennae rather short, their middle and next-last joints (5-10) transverse; pronotum twice as broad as long with rather strongly rounded sides, at middle with two, slightly grooved,

longitudinal rows of punctures, elsewhere with only a few scattered punctures on the sides, together with the head the surface is finely reticulate; elytra somewhat longer than pronotum, with much finer punctation than in nana, around scutellum with few, very fine and scattered punctures, at middle and especially toward hind corners somewhat denser and more distinctly punctated; abdomen smooth. L. 1.5 mm.

In the ♂ the fifth free dorsal joint of abdomen before posterior margin with a transverse row of four or six granules, the sixth in posterior margin with two robust inward-curved (corner) teeth, separated by a broad, rounded incision, and above this most often with two small granules.

Rare or very rare, in fungi (Hvalsø, Zealand, Maribo, Aalholm); also rare in Skaane (Thoms.). Distributed throughout the greater part of Europe.

8. G. laevipennis Kr.

(Kraatz Ins. D. II, 358; Thoms. Skand. Col. II, 267; Muls. et Fey Brévip. 1871, 54; Ganglb. Käf. M. II, 302).

From the two preceding species, to which it is closely allied, laevipennis is especially separated by polished, almost smooth elytra, and by the sex-characters of the ♂.

Yellow-red; forebody polished, abdomen less strongly glistening; the head and a band before abdominal tip black; pronotum red-brown or brown-black with somewhat lighter posterior margin; elytra reddish yellow, the hind

corners and sometimes also nearest the suture brown-black; antennae brownish toward the tip, elsewhere like mouth-parts and legs yellow.

Head, pronotum and elytra extremely finely reticulated in surface; the head with very scattered isolated punctation; middle and next-last joints of the antennae not strongly transverse; pronotum twice as broad as long, with very feebly rounded, posteriorly almost straight sides, slightly convex, at middle with two flat longitudinal grooves and in each of these with a single row of punctures, of which those at middle are fine, elsewhere with only a few single punctures on the sides; elytra $\frac{1}{3}$ longer than pronotum, smooth or at middle with extremely fine and indistinct punctation, polished, humeri prominent; abdomen of rather equal breadth, impunctate.

L. 2 mm.

In the ♂ the fifth free dorsal joint of abdomen with a transverse row of four feeble granules before posterior margin, the sixth at tip with an angular incision, whereby it is divided into two triangular teeth.

Rare or very rare, in fungi, especially it seems in tree-fungi (Vang forest in Vendsyssel; Hjerup in Fyen; Errede and Ermelund in North Zealand). Middle and North Europe; rare in Skaane (Thoms.).

9. G. lucidula Er.

(Erichs. Käf. Mk. Er. I, 369; Gen. Spec. Staph. 187; Kraatz Ins. D. II, 359; Thoms. Skand. Col. II, 268; Muls. et Rey Brévip. 1871, 88; Janglb. Käf. M. II, 302).

A very small species, easily recognized by the color and by comparatively long, polished, almost smooth elytra.

Glistening black; elytra brownish yellow, on hind corners and at the sides more or less extensively black; antennae brown, their base, mouth-parts and legs yellow.

The head at sides with sparse and rather fine punctation; antennal middle and next-last joints transverse; pronotum very short, more than twice as broad as long, with rounded sides and at middle with two almost evanescent rows of punctures - posteriorly however indicated by two large deep punctures - elsewhere with very simple punctation; elytra much longer than pronotum, almost impunctate, polished; abdomen posteriorly extremely finely or indistinctly punctated (♀), anteriorly not punctated. L. 1-1.3 mm.

In the ♂ the fifth free dorsal joint of abdomen with fine granulate punctation, and posterior margin of the sixth with two robust, acute teeth, separated by a broad incurve..

On tree-fungi, under damp leaves and in alluvium, but everywhere very rare, and in this country only found singly in a few places in Sjaelland (Soro, Ruderhegn and Dyrehaven at Copenhagen). Middle and North Europe; rare in Skaane (Thoms.).

10. I. Poweri Crotch.

(Crotch Transact. Ent. Soc. Lond. V. 1866, 439; Janglb. Kaf. M. II, 302 - puncticollis Thoms. Skand. Col. IX, 232.- punctulara Muls. et Rey Brevip. 1871, 40).

Among the few species with scattered punctation of the pronotum and without rows of punctures, this is the largest; further identifiable by the color, punctation of elytra and sex-characters of the ♂.

Reddish-yellow, glistening; the head, hindmost part of elytra or at least the outer hind corners, also a - often feeble - transverse band before abdominal tip black or pitch-brown; pronotum often red-brown; antennae, mouth-parts and legs yellow.

Head, pronotum and elytra extremely finely shagreened in surface; the head on sides with scattered, large punctation; antennal middle and next-last joints (5-10) rather strongly transverse, evenly broad; pronotum twice as broad as long, with smoothly, not strongly rounded sides, its dorsum especially inwardly toward middle with scattered and rather large, but not deep punctation, at middle before posterior margin with two single larger punctures, but at middle - in contrast to several closely allied species: bihamata, fasciata - without longitudinal rows of punctures; elytra longer than pronotum, at middle finely and rather slightly punctated; abdomen somewhat tapering, impunctate. L. 1.5 mm.

In the ♂ the fifth free dorsal joint of abdomen before posterior margin with a transverse row of longish granules, of which the two at middle slant toward each other; posterior margin of the sixth joint at middle with two closely set, narrow spines and at each side a more robust, slightly inward curved spine or tooth.

Distributed in North and Middle Europe, and not very rare in this country; most often on tree-fungi (Geelskov; Thureby; Odense; Vejle, Aalborg et al.).

11. G. minima Er.

(Erichs. Käf. Mk. Br. I, 370; Gen. Spec. Steph. 192; Kraatz Ins. D. II, 359; Thoms. Skand. Col. IX, 232; Muls. et Rey Brévip. 1871, 69; Ganglb. Käf. M. II, 303).

A very small species, in combination with this identifiable by the color, and punctation of elytra.

Reddish-yellow, glistening; the head, outer hind corners of elytra, and a band before abdominal tip pitch-black or pitch-brown; antennae, mouth-parts and legs yellow.

The head at sides with scattered, large punctation; middle and next-last joints of antennae (5-10) rather strongly transverse; pronotum short, more than twice as broad as long, with slightly rounded sides, with rather fine and irregularly scattered punctation, at middle somewhat more distinct and dense than on the sides, at middle before posterior margin, and at the anterior margin with a couple of larger punctures, but without regular longitudinal rows of punctures at middle. Elytra with particularly fine, scattered, feebly scabrous-punctation; abdomen indistinctly punctated. L. 1-1.2mm.

In the ♂ the fifth free dorsal joint of abdomen with a transverse row of four small carina, posterior margin of the sixth at middle with two fine, close set spines and at each side a somewhat longer and more robust spine or tooth. - There is seemingly some irregularity in the sex-characters of the ♂. Several authors describe the sixth free dorsal joint as having a triangular tooth at middle, and a larger at each side (cf. Mulsant, Ganglbauer), others, that it has three teeth, however not describing these (cf. Seidlitz: Fauna Baltica), and still others, describe it with two fine spines at middle and a more robust tooth at each side (J. Waterhouse, see Fowler: Col. Brit. Isl.). The last I have found confirmed by investigation of the here found animals.

In fungi, often in colonies; distributed in North and Middle Europe, but rare in Denmark or very local (Vang forest, Vendsyssel, Hinnerup forest; tommerup, Fyn; Brødeskov at Hillerød et Al.).

12. G. manca Er.

(Erichs. Gen. Spec. Staph. 190; Kraatz Ins. D. II, 361; Thoms. Skand. Col. II, 268; Muls. et Pey Brévip. 1871, 72; Ganglb. Käf. M. II, 303).

A little larger and more robust than minima, identifiable by the color and sex-characters of the ♂.

Pitch-black, glistening; abdominal tip, and most often also elytral humeri red- or yellow-brown; antennae, mouth-parts and legs yellow.

Head on the sides with rather fine and scattered punctation; antennae robust, their middle and next-last joints (5-10) strongly transverse; pronotum short, twice as broad as long, with smoothly rounded sides, together with head and pronotum particularly finely reticulated in surface, dorsal side, and especially at middle of this with rather coarse, scattered punctation, with two somewhat larger punctures at middle before posterior margin; elytra somewhat longer than pronotum, with rather fine and even, but not dense granulate-punctation; abdomen indistinctly punctated. L. 1.3 mm.

In the ♂ the posterior margin of the sixth free dorsal joint of abdomen with two slightly inwardly curved, acute teeth, separated by a broad interval; the next-last ventral joint is prolonged and broadly rounded off at tip.

Principally on tree-fungi and under bark of fungusy stumps and trunks; rare or very rare, and heretofore apparently only found in Sjaelland (Ørholm, Bognaes, Vallø). Middle and North Europe; rare in Skaane (Thoms.).

2. Subgenus Phaenogyra Muls. et Pey.

13. G. strictula Er.

(Erichs. Gen. Spec. Staph. 191; Kraatz Ins. D. II, 360; Muls. et Pey Brévip. 1871, 80; Ganglb. Käf. M. II, 303).

A slightly elongate, anteriorly rather strongly narrowing species with narrower head, smaller eyes, longer temples and narrower pronotum than any of the preceding species; further recognizable by the color.

Pitch-black or brown-black, with greasy gloss; elytra often reddish-brown at middle; antennae, mouth-parts and legs yellow.

The entire surface of the body especially finely reticulated and due to this with modulated shine; the head a little narrower than pronotum, posteriorly not strongly narrowing, with rather large, but not strongly protruding eyes, and of same length as the temples; on sides with rather fine and sparse punctation; antennae from the first joint smoothly thickened distally, the middle joints feebly, the next-last more strongly transverse, and $1\frac{1}{2}$ times as broad as long. Pronotum $1\frac{1}{2}$ times as broad as long, feebly narrowing anteriorly, with rounded sides, at middle with two, most often feebly depressed, somewhat irregular longitudinal rows of punctures; elsewhere with simple punctation; elytra amply $1\frac{1}{3}$ times as long as pronotum and much broader than this, feebly broadened posteriorly, with scattered and very fine granulate-punctation; abdomen indistinctly punctated.

L. 1.3-1.5 mm.

In the ♂ the fifth free dorsal joint of abdomen with a transverse row of six granules, posterior margin of the sixth at middle with two very small, short spines and at each side with a longer, inward curved tooth or spine; on dorsal side, midway before posterior margin as a rule (when the joint is not drawn in) two small granules are visible (fig. 98).

Distributed and frequent in all our forest regions, on labyrinthian

fungi on beech and oak stubs, most often numerous, Central Europe.

14. G. polita Gravh.

(Gravh. Micr. 99; Erichs. Käf. Mk. Br. I, 369; Gen. Spec. Staph. 190; Kraatz Ins. D. II, 360; Thoms. Skand. Col. II, 269; Ganglb. Käf. M. II, 304. - brevicornis Muls. et Rey Brévip. 1871, 84).

Much like strictula, from which it (cf. Kraatz and Ganglbauer) principally is separated by: that it most often is a little smaller and hardly as dark in color; the antennae shorter, their middle and next-last joints (5-10) much more strongly transverse and more evenly broad; pronotum and especially elytra more distinctly punctated. L. 1.2 mm.

In the ♂ the abdominal sex-characters nearly formed as in strictula, however the corner-teeth of the sixth free tergite are shorter.

Said to occur together with strictula in tree-fungi, but is in Middle Europe more rare than this. In this country heretofore not observed, possibly overlooked, contrariwise found in Skaane (Thoms.).

15. G. boleti Linn.

(Linné Syst. Nat. X, 423; Erichs. Gen. Spec. Staph. 191; Kraatz Ins. D. II, 361; Thoms. Skand. Col. II, 269; Muls. et Rey Brévip. 1871, 87; Ganglb. Käf. M. II, 304; - punctipennis Thoms. Skand. Col. II, 269).

Very small and comparatively narrow, smallest species of the genus; furthermore also identifiable by punctuation of pronotum.

Pitch-black or darkly brown; the elytra as well as base and tip of abdomen lighter; antennae, mouth-parts and legs yellow.

By form of head, not strongly protruding eyes and distinctly, feebly oblique temples, it allies itself with strictula; the antennae are dis-

tinctly thickened distally, their middle and next-last joints transverse; pronotum twice as broad as long, all over with evenly and fine, but not dense punctation; elytra with fine and not dense scabrous punctation, without sutural stripe, parallel, shorter than their breadth together; abdomen entirely with extremely fine punctation. L. 0.7-1 mm.

In the ♂ the sixth free dorsal joint of abdomen at tip emarginate (Ganglb.).

In tree-fungi and most often numerous; distributed in North and Middle Europe; in this country seemingly very rare and local, heretofore apparently only found at Sønderborg (Tustnei). Skaane "rare in pine-fungi" (Thoms.).

3. Subgenus Agaricochara Kr.

16. G. laevicollis Kr.

(Kraatz Stett. Ent. Ztg. XV, 1854, 186; Ins. D. II, 362; Muls. et Rey Brévip. 1871, 93; Ganglb. Käf. M. II, 304).

Most often a little longer than the preceding species and also a little broader, especially identified by the extremely feeble punctation of pronotum and proportionately long elytra.

Yellow-brown or brown, feebly glistening, particularly finely haired; the head pitch-black or brownish; pronotum yellow-red or brownish-red; elytra brownish-yellow with a dark shade or obliterated spot across the middle and before hind corners; abdomen most often pitch-brown or pitch-black with lighter tip; antennae brownish, their base, mouth-parts and legs yellow.

Head, pronotum and elytra particularly finely reticulate (shagreened); the head a little narrower than pronotum, only feebly narrowing posteriorly

and with not strongly protruding eyes, indistinctly punctated; antennae proportionately long, feebly thickened distally, their fourth joint longer than broad, and longer than in boleti, minima et al., the middle and next-last joints (5-10) feebly transverse. Pronotum narrower than elytra, more than twice as broad as long, with rather strongly rounded sides, indistinct or extremely fine, scattered punctation; elytra at least $1\frac{1}{2}$ times as long as pronotum, as long as their breadth together, rather fine and dense, feebly rugose punctation; abdomen especially finely or indistinctly punctated, its first two free dorsal joints longer than the following. l. 1-1.2 mm.

In the ♂ the sixth free dorsal joint of abdomen in posterior margin with two, inwardly directed spines, separated by a broad incision.

Distributed in South and Middle Europe; in this country so far only found in Skørping forest, south of Aalborg (1 specimen on a tree-fungus, 8. 1885, author), and at Haderslev (Andersen). Denmark is probably its northern boundary.

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40. Genus Encephalus Westw.

(Testwood Guer. Mag. Zool. III, 1833, pl. 69; Kraatz Ins. D. II, 351; Thoms. Skand. Col. II, 265; Muls. et Rey Brévip. 1871, 11; Ganglb. Käf. M. II, 304).

From Gyrophaena, to which Encephalus is closely allied, it is easily separated by the following pronounced characters:

Body ovate, very short and broad, almost without punctation or hair vestiture; the head deeply imbedded in pronotum; the eyes slightly protruding; antennae short, distinctly thickened distally, and not only their

fourth joint, like in Gyrophæna, but also the fifth very small, the following middle and next-last joints (6-10) increasingly strongly transverse, at least twice as broad as long. Pronotum about three times as broad as long, posteriorly almost as broad as elytra, narrowing anteriorly with rounded sides, almost rightangular hind corners and very finely bounded posterior margin, at middle convex; the elytra scarcely longer than pronotum, broadest posteriorly and with almost even posterior margin; abdomen broad, with rounded sides, dorsally concave, with high side-margins, ventral side ovate convex. The ability of Gyrophæna to curve abdomen upward and forward, is in Encephalus, by the peculiar structure of abdomen, so strongly developed, that this can bend entirely forward closing over the forebody, whereby the ventral side is upward. In this position the following species acquires more likeness with a small, round Agathidium than with a Staphylinid.

In Middle and North Europe only one species occur which also is found in our country.

1. E. complicans Westw.

(Westw. Juer. Mag. Zool. III, 1833, pl. 69; Erichs. Käf. Mk. Br. I, 366. Gen. Spec. Staph. 183 [Gyrophæna]; Kraatz Ins. D. II, 352; Thoms. Skand. Col. II, 265; Muls. et Rey Brévip. 1871, 14; Ganglb. Käf. M. II, 305).

In combination with the above described characters easily identified by the color.

Black, somewhat greasy glistening, not haired; posterior margin and corners of pronotum narrowly translucent brown-yellow; elytra at middle most often brown-red; antennae, mouth-parts and legs rust-red.

Body impunctate, but in surface ground particularly finely shagreened and therefore with modulated shine. L. 2 mm.

In the ♂ sixth free dorsal joint of abdomen in posterior margin at each side with a spine or acute tooth.

Very rare and always only found singly under leaves and moss on damp or semi-damp forest-ground, also at fungi and in alluvium (Charlottenlund, Hillerød, Lethrabort; Odense; Randers, Lundbykrat at Aalborg; et al.); Skaane (Thoms.).

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41. Genus Brachida Muls. et Rey.

(Muls. et Rey Brévip. 1871, 4; Ganglb. Käf. M. II, 305).

By the short, broad, somewhat oval form of the body, two-jointed labial palpi, four-jointed middle-tarsi (fore-t. 4-, hind-t. 5-jointed), also by broadly separated middle-coxae, and by that at tip broadly emarginate meso-sternum between the coxae, Brachida is more closely related to Gyrophaena and Encephalus than to Homalota, to which genus the following species was formerly ascribed (cf. Kraatz Ins. D. II, 323). From Gyrophaena and Encephalus it is principally separated by, that the first joint of labial palpi is strongly thickened, the body more strongly convex and distinctly haired, and that posterior margin of pronotum is much more finely bounded.

In Middle and North Europe only 1 species is found.

1. B. exigua Heer.

(Heer Faun. Helv. I, 312 [Gyrophaena]; Ganglb. Käf. M. II, 306. - notha Erichs. Gen. Spec. Staph, 126; Kraatz Ins. D. II, 323; Sharp Rev. Brit. Hom. 269 [Homalota]; Muls. et Rey Brévip. 1871, 7. - pilosa Hampe Stett. Ent. Ztg. XI, 1850, 348 [Gyrophaena]).

A small species, distinguished by the broad, short-oval and strongly convex form of the body, also by very short, broad, strongly glistening pronotum and principally identified thereby.

Black or pitch-brown, glistening, with rather sparse and long, somewhat rough gray hair vestiture, along sides bristle-haired; antennal base, mouth-parts and legs rust-red or brownish-yellow.

The head is narrower than pronotum, strongly bent downward, posteriorly only feebly narrowing, dorsally rather finely and densely punctated, with rather large, somewhat protruding eyes and sharply marginated temples and genae; antennae rather short, smoothly thickened distally, their third joint shorter and finer than the second, the fourth hardly longer than broad, the next-last rather strongly transverse. Pronotum more than twice as broad as long, very short, almost as broad as elytra, anteriorly narrowing, with rounded sides and posterior margin, strongly and broadly convex, with scattered and fine punctation, strongly glistening; the elytra scarcely longer than pronotum, broad, convex, rather finely and densely punctated, their posterior margin inside the outer corners scarcely incurved; abdomen short and broad, roundly tapering, very finely and sparsely punctated; ventral side convex and like in the Gyrophaena species abdomen most often curved upwards. First joint of hind tarsi longer than the following, but not as long as the two following together. L. 2 mm.

In the ♂ the elytra posteriorly at side of the suture with a sharp, glistening grain; posterior margin of sixth free dorsal joint of abdomen at middle emarginate (Sharp, Ganglb.).

Distributed in Middle (and ? North) Europe; heretofore however not
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found in this country, nor in Sweden. It lives on damp ground under leaves
and moss, at the root of grasses and the like, said also to be found on
tree-fungi.

4. Division Hygronomica.

The head anteriorly not snout-like prolonged; antennae 11-jointed.
Tarsi all 4-jointed.

To this only 1 genus.

42. Genus Hygronoma Tr.

(Erichs. Käf. Mk. Br. I, 312; Gen. Spec. Staph. 79; Kraatz Ins. D. II,
340; Thoms. Skand. Col. II, 270; Muls. et Rey Brévip. 1873, Cl; Ganglb.
Käf. M. II, 312).

Body elongate, flat and evenly broad; the head porrect, across the rather large, somewhat protruding eyes fully as broad as pronotum, posteriorly roundly narrowing, with rather long ventrally immarginate temples; the antennae reach over the posterior margin of pronotum and only feebly thickened distally. The left mandible at middle with a robust tooth; the third joint of maxillary palpi is longer than the second, feebly thickened, the fourth very small and spiculiform; tongue short, cleft into two lobes, each with an offset obtuse tip; labial palpi three-jointed.

Pronotum anteriorly almost as broad as elytra, as broad as long, posteriorly feebly narrowing, with roundly-obtuse-angular hind corners; elytra $\frac{1}{3}$ longer than pronotum, with almost parallel sides, their posterior margin inside the outer corners scarcely incurved; abdomen elongate, feebly broadened hindward, its first four free dorsal joints depressed-transverse-

grooved at base and of equal length, the fifth longer than the fourth. The legs short; tarsi short and flat, all 4-jointed, the first three joints cleft at tip, claw-joint roundly sole-shaped and terminated with a small wart (a rudimentary fifth joint ?), upon which the claws are attached; first joint of hind tarsi as long as the two following together.

Only 1 species is known of this genus, which is distributed in North and Middle Europe, and which lives at lakes, swamps and streams on water plants.

1. H. dimidiata Gravh.

(Gravh. Micr. 149; Erichs. Käf. Ek. Br. I, 313; Gen. Spec. Staph. 80; Kraatz Ins. D. II, 341; Thoms. Skand. Col. II, 271; Muls. et Rey Brévip. 1873, 94; Ganglb. Käf. M. II, 312).

In combination with the flat, evenly broad form of the body, and other above denoted characters this species is easily identified by the sharply defined colors of the elytra.

Black, dull, very finely and rather densely haired; elytra yellow, but their foremost third part limited black; antennae brownish, their base, mouth-parts and legs red-yellow.

Dorsally the entire body with particularly dense, on head robust, elsewhere rather fine punctation; the head large, flat, in the ♂ at middle slightly impressed; second and third joints of the antennae about equally long, the next-last scarcely transverse; pronotum (see above) flat, at middle more (♂) or less (♀) distinctly grooved, together with elytra and abdomen without erect side-bristles. L. 2.5-3 mm.

In the ♂ the next-last ventral joint of abdomen somewhat prolonged and rounded off at tip.

At lakes, swamps and streams on water plants and in alluvium; in this country often found here and there in North Sjaelland, otherwheres very rare (Odense). Rare in Skaane (Thoms.).

5. Division Oligotina.

The head anteriorly not snout-shaped prolonged. Antennae only 10-jointed. All tarsi 4-jointed.

To this only 1 genus.

43. Genus Oligota Mannh.

(Mannh. Brach. 72; Erichs. Käf. Mk. Br. I, 326; Gen. Spec. Staph. 179; Kraatz Ins. D. II, 346; Thoms. Skand. Col. II, 262, 263: Oligota+Microcera; Muls. et Rey Brévip. 1873, 98, 108: Microcera+Oligota; Faglb. Käf. M. II, 306).

Oligota species belong to the very smallest among the Aleocharines.

Body slightly convex, in some species evenly broad and narrow, in others more oval or ovate (subg. Holcbus); the head without neck, rather embedded in the pronotum and somewhat bent downward, with normally large, slightly protruding eyes, and indistinctly marginate temples and genae; antennae short, 10-jointed, toward tip club-like thickened, their first two joints rather thick, the third joint small and much shorter than the second, ob-conic, the two or three following joints small, rounded, the next-last (8-9 or 6-9) in combination with the large ovate distal joint form a more or less sharply defined three-five-jointed club. Maxillary palpi rather

long, their third joint in some species (e.g. pusillima) ovate, in most of them more elongate, distal joint small. spiculiform; labial palpi indistinctly three-jointed.

Pronotum short, at base about as broad as elytra; these most often distinctly longer than pronotum, their mutual posterior margin at middle broadly incurved; abdomen in several species rather equally broad, in others

strongly tapering, its first three free dorsal joints most often depressed at base; legs slender, tibiae very finely stiff-haired, all tarsi 4-jointed, first joint of hind tarsi as long as the following two joints together.

In several particulars Oligota approaches the genus Hypocyrtus among the Tachyporines. The antennae in both only 10-jointed, and tarsi 4-jointed; but in Oligota the antennae are inserted on forehead - in Hypocyrtus under side-margin of forehead - distally more robustly clavate and the club more distinctly defined; the body either of more uniform width or, even in subg. Holobus, less ovate than in Hypocyrtus.

Most of the Oligota species live on semi-damp ground under leaves and moss and is often found in alluvium, but several species occur indoors in outhouses and cellars in waste. A half score species are distributed throughout Middle and North Europe, and of these, 5 are heretofore found in Denmark; 2 of the others are included in the following.

Key to Subgenera and Species.

1. Abdomen short, strongly tapering; body as a whole oblong-oval: 2. Subg.

Holobus Sol..... 6.

1. Abdomen of uniform breadth or not strongly tapering; body as a whole uniformly broad or only feebly fusiform: 1. Subg. Oligota s. str.: 2.
2. Antennal club three-jointed.....3.
- Antennal club four-five-jointed.....5.
3. Color of body principally black.....4.
- Body red-brown (or lighter), head and foremost abdominal joints pitch-brown, abdominal tip reddish-yellow. L. 0.7-0.9 mm.: 2. O. parva Kr.
4. Antennae, mouth-parts and legs yellow; body narrow. L. 0.7-0.9 mm....
-1. O. pusillima Gravh.
- Antennae, mouth-parts and legs brownish; body broader. L. 0.7-1 mm.
-3. O. atomaria Er.
5. Elytra black; body comparatively broad. L. 1-1.2 mm.: 4. O. granaria Er.
- Elytra and abdominal tip red-brown; body narrower. L. 0.7-1 mm....
-5. O. inflata Mannh.
6. Antennal club four-five-jointed; abdominal tip reddish-yellow. L. 1 mm.
-6. O. apicata Er.
- Antennal club sharply defined three-jointed; abdomen entirely black.
- L. 1 mm.....7. O. flavicornis Lac.

1. Subgenus Oligota s. str.

1. O. pusillima Gravh.

(Gravh. Mon. 175; Erichs. Käf. Mk. Br. I 363; Gen. Spec. Staph. 179; Kraatz Ins. D. II, 347; Thoms. Skand. Col. II, 262; Muls. et Rey Brévip. 1873, 150; Ganglb. Käf. W. II, 311).

A very small and narrow species, of uniform breadth; in combination with the shape identifiable by three-jointed antennal club, and by the color of antennae and legs.

Black with brownish abdominal tip, glistening, finely haired; club of antennae most often brownish, their base, maxillary palpi and legs reddish yellow.

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Head rather broad, however narrower than pronotum, with extremely fine, scattered punctation; antennal club three-jointed, but not sharply defined, inasmuch as the seventh antennal joint is feebly transverse and broader than the rounded sixth joint. Pronotum posteriorly as broad as elytra, twice as broad as long, anteriorly roundly-narrowing, at middle anteriorly strongly convex, with extremely fine, scattered punctation and together with the head more strongly glistening than the elytra and abdomen; elytra hardly longer than pronotum, with very fine rough, scabrous sculpture, their sides almost straight; abdomen of uniform breadth, sculptured about like the elytra, its fourth and fifth free dorsal joints of equal length and longer than the two preceding joints. L. 0.7-0.8 mm.

Distributed everywhere in Europe, and not rare in this country, in leaf mold in forests, gardens and parks, also under offal or hay and straw in stables and outhouses, at the foot of haystacks et al.

2. O. parva Kr.

(Kraatz Berl. Ent. Ztschr. 1862, 300; Muls. et Rey Brévip. 1873, 131; Ganglb. Käf. M. II, 310).

From pusillima, which it resembles in form, sculpture and size, also in the structure of the antennae, it is easily separated by the color and more feeble gloss of the body, also that the fifth free dorsal joint of abdomen is longer than the fourth.

Red-brown or brownish-yellow, feebly or dully glistening, finely haired; the head and the foremost abdominal joints pitch-brown, abdominal tip reddish-yellow; antennal club brownish, their base, maxillary palpi and legs yellow. L. 0.7-0.9 mm.

A cosmopolitan species, widely distributed at shipping ports, often numerous in harbours of South and West Europe, especially in hips of earth-nut cakes, also on the strand under alluvium (Ganglb.); in Denmark found only in few numbers at Odense (9. 1907. Jørgensen).

3. O. atomaria Er.

(Erichs. Käf. Mk. Br. I, 363; Gen. Spec. Staph. 180; Kraatz Ins. D. II, 348; Muls. et Rey Brévip. 1873, 142; Ganglb. Käf. M. II, 311).

Very closely allied to pusillima, but most often a little larger, especially broader, with somewhat longer elytra and more tapering abdomen; antennal club sharply three-jointed.

Black, glistening, finely haired; abdominal tip brownish; antennae, mouth-parts and legs pitch-brown. L. 0.7-1 mm.

Distributed in Middle Europe and England; under certain fern leaves and other plant waste (Fowler); heretofore not with certainty denoted in this country. ----- (Page 281) -----

4. O. granaria Er.

(Erichs. Käf. Mk. Br. I, 364; Gen. Spec. Staph. 181; Kraatz Ins. D. II, 349; Muls. et Rey Brévip. 1873, 108; Ganglb. Käf. M. II, 310.-pentatoma Forst.).

Short fusiform, with four (five)-jointed antennal club, and in combination with the color identified thereby.

Body much broader than in the preceding species, narrowing anteriorly and posteriorly; head and pronotum rather densely and very finely punctated. The last four joints of the antennae (7-10) together form a robust club; the sixth joint is considerably narrower than the seventh, but broader than the fifth and is occasionally considered as part of the club, which then becomes five-jointed (pentatoma Först.). Pronotum posteriorly as broad as the elytra anteriorly, anteriorly strongly, roundly narrowing, convex; elytra $1\frac{1}{3}$ longer than pronotum, with slightly arcuate sides, with fine and dense, scabrous sculpture; abdomen narrowing posteriorly, finely and densely punctated, its fifth free dorsal joint longer than the fourth.

L. 1-1.2 mm.

Very rare. It lives in outhouses and cellars on Mucedo cellaris, which grows on old tubs, woodwork and walls (Mulsant) and is here found in company with Cryptophagus species, Mycetaea hirta and Orthoperus, presumably in pursuit of their young. (Copenhagen, Lyngby, Søborg, Randers).

Middle Europe.

5. O. inflata Mannh.

(Mannh. Brach. 72; Kraatz Ins. D. II, 310. - subtilis Erichs. Käf. Nk. Br. I, 364; Gen. Spec. Staph. 180).

Narrower than granaria, feebly fusiform, further identifiable by the four-jointed club of the antennae, and color of the elytra.

Black or pitch-black, glistening, finely haired; elytra and abdominal tip, sometimes also pronotum brown or red-brown; club of the antennae brownish, their base, mouth-parts and legs reddish-yellow.

Head and pronotum particularly finely, almost invisibly punctated; antennal club four-jointed, inasmuch as the seventh antennal joint is distinctly broader than the sixth; pronotum posteriorly as broad or hardly as broad as fore-margin of the elytra, anteriorly roundly narrowed, convex; elytra //3 longer than pronotum, with slightly arcuate sides, very fine and dense, scabrous sculpture; abdomen posteriorly slightly narrowing, sculpture same as of elytra, its fifth free dorsal joint distinctly longer than the fourth. L. 1 mm.

Our most frequent species after pusillima, but as a whole however rare. It occurs as well in cellars and outhouses in waste, as under fagot and leaves in gardens and woods or in debris at the foot of straw- and hayricks. Distributed all over Europe.

2. Subgenus Holobus Sol.

(Microcera Thoms.).

6. O. apicata Erichs.

(Erichs. Käf. Mk. Br. I, 365; Gen. Spec. Staph. 182; Kraatz Ins. D. II, 349; Thoms. Skand. Col. II, 264; Muls. et Rey Brévip. 1873, 115; Ganglb. Käf. M. II, 309. - abdominalis Scriba).

Ovate, and in shape not unlike a small Hypocyrtus, posteriorly strongly narrowing; in combination with the shape easily identified by the conspicuous light tip of abdomen, and by the five-jointed club of the antennae.

Black, glistening, very finely haired; last three joints of abdomen, antennae, mouth-parts and legs clear reddish yellow. Elytra and pronotum sometimes brownish.

Head and pronotum extremely finely and rather densely punctated; sixth joint of the antennae distinctly broader than the fifth and together with the four following more robust joints, form a smoothly thickened five-jointed club. Pronotum posteriorly as broad as elytra, strongly narrowing anteriorly, with slightly rounded sides, convex; elytra $\frac{1}{3}$ longer than pronotum, with very fine, scabrous sculpture, sides feebly rounded; abdomen strongly tapering from base, with particularly fine, isolated punctation, its fifth free dorsal joint much longer than the fourth. L. 1 mm.

Widely distributed in Europe. Very rare in this country; a few specimens in crumblings under bark of beech in Skørping forest, south of Aalborg (author), a few from Lolland, and a bakery in Copenhagen (Løvendal). Very rare in Skaane (Thoms.).

7. O. flavicornis Lac.

(Eoisd. et Lac. Faun. Ent. I, 521; Erichs. Käf. Mk. Br. I, 364; Gen. Spec. Staph. 181; Kraatz Ins. D. II, 350; Thoms. Skand. Col. II, 263; Muls. et Rey Brévip. 1873, 102; Ganglb. Käf. M. II, 309).

Of same Hypocyrtus-like shape as apicata, furthermore identifiable by the color and by the three-jointed club of the antennae.

Glistening black, very finely haired; extreme tip of abdomen brownish; antennae and mouth-parts yellow; legs brownish-red.

Head and pronotum extremely finely and rather densely punctated; club of the antennae sharply offset, three-jointed; pronotum posteriorly as broad as elytra, strongly narrowing anteriorly, with feebly rounded sides; elytra $\frac{1}{2}$ time longer than pronotum, with slightly arcuate sides, sculpture same as in preceding species; abdomen strongly narrowing posteriorly, rather

robustly and densely punctated, its fifth free dorsal joint much longer than the fourth. L. 1 mm.

Distributed in Middle Europe; also found on damp ground in Skaane (Thoms.); in Denmark not so far discovered.

6. Division Diglossina.

Head snout-like tapering, and maxillary palpi peculiarly long, especially their second and third joints are very elongated. All tarsi 4-jointed.

, To this only one genus.

44. Genus Diglossa Hal.

(Haliday. Ent. Mag. IV. 1837, 252; Muls. et Rey Brévip. 1873, 74; Ganglb. Käf. M. II, 313).

The few species of this genus are in appearance somewhat like Phytosus and some Trogophloeus species. Like these it is equipped for rooting; or digging in the sand, and especially characterized by peculiarities of head, mouth-parts, legs and tarsi.

The head obpyriform, posteriorly thick, rounded off, but not constricted, convex, broader than pronotum, anteriorly snout-like tapering, with rather small and not protruding eyes; temples and genae not marginated; antennae rather short, only feebly thickened distally, their first two joints elongate, the third much shorter than the second, the next-last feebly transverse; mandibles long and slender, far protruding, at tip slightly curved and crossed; maxillary palpi especially long, their second and third joints

very elongate, the fourth contrariwise extremely short and fine, scarcely visible; labial palpi very long, fine, apparently only two-jointed.

Pronotum anteriorly a little narrower than the head, convex, with anteriorly rounded, posteriorly constricted, incurvate sides and here much narrower than elytra, which most often are shorter than pronotum, and of which the posterior margin inside outer corners is not incurved. Abdomen of uniform breadth or feebly broadened posteriorly, its first four free dorsal joints transverse-grooved depressed at base, the fifth longer than each of the preceding; legs rather robust with large protruding fore-coxae; tibiae haired with a few spines at the tip; all tarsi short, 4-jointed, claw-joint comparatively thick and provided with peculiar, angulate bent claws; first joint of hind tarsi hardly as long as the two following, short joints together, as long as the claw-joint.

The species, few in numbers, live exclusively on the ocean beach, where they dig themselves into the sand and under stones where they often are washed over by the tide water. In this country 1 species is found, which together with an other, closely allied species, is distributed at the coasts of West Europe.

1. D. mersa Hal.

(Hal. Ent. Mag. IV. 252; Muls. et Rey Brévip. 1873, 84; Langlb. Käf. M. II, 314).

Very small, narrow, wingless; in combination with the above described generic characters identified by especially short elytra.

Black, distinctly white- or gray-haired; forebody almost dull, abdomen rather glistening; elytra sometimes brownish; antennae, mouth-parts, and legs brownish-red.

The head with fine and dense, pronotum fine and very dense punctation; the head (see above) posteriorly thick, a little broader than pronotum; middle joints of the antennae (4-7) rounded, the next-last feebly transverse; pronotum as long as anteriorly broad, posteriorly strongly narrowing with anteriorly rounded, posteriorly incurvate sides, rather convex, at medial line sometimes feebly grooved; elytra distinctly shorter than pronotum, flat and parallel; abdomen feebly broadened posteriorly, with fine and isolated punctation. L. 1.5-2 mm.

It has lately been discovered and collected in numbers under stones and seaweeds on the strand at Esbjerg (Jensen-Haarup et al.). It is probably more widely distributed, principally along the coast of West Jutland.

A closely allied, winged and a little larger species, D. submarina Fairm., with longer elytra, more densely punctated and posteriorly more strongly widened abdomen, is known from the coasts of Ireland and North France.

7. Division Myllaenina.

The head snout-like tapering; maxillary palpi very long, their second and third joints especially elongated; fore-tarsi and middle-tarsi 4-jointed; only hind tarsi 5-jointed.

To this only 1 genus.

45. Genus Myllaena Er.

(Erichs. Käf. Mk. Br. I, 382; Gen. Spec. Staph. 209; Kraatz Ins. D. II, 367; Thoms. Skand. Col. III, 15; Muls. et Rey Brévip. 1873, 34; Ganglb. Käf. M. II, 317).

By broad pronotum and most often strongly tapering abdomen, the fine and dense punctation of entire body, also by the silky-glistening dense hair vestiture the Myllaena species acquire in appearance not a little likeness with the species of Oxypoda, with which they also in mode of living have much in common. They are easily separated from these by form of the head, and structure of tarsi.

The head (Fig. 99) is rather small, narrower than pronotum, strongly bent downward, posteriorly strongly embedded in pronotum, rounded off, but not constricted, anteriorly snout-like tapering with large labrum, and with medium size, not protruding eyes, and margined temples and genae.

— (Page 285) —

Antennae thin and slender, rarely very feebly thickened distally, their second joint elongate and longer than the first and third, the following joints (4-10) longer than broad, or the next-last very feebly transverse; mandibles not prominent; maxillary palpi very long, their second and third joints especially elongate, the third fusiform and as long as the first two antennal joints together, the fourth spiculiform and scarcely visible; labial palpi long, bristle-shaped, two-jointed.

Fig. 99. Head of Myllaena dubia Gravh. lbr. labrum. l. e. maxillary palpal lobe. p. lab. labial palpus. p. mx. maxillary palpus.

Pronotum as broad as or broader than elytra, $1\frac{1}{2}$ times as broad as long,

anteriorly narrowing, with rounded sides and obtuse-angular or almost straight hind corners, posterior margin inside these feebly emarginate; elytra most often as long as pronotum, rarely shorter, their posterior margin inside the outer corners most often sharply, sometimes almost angularly incurved; abdomen more or less strongly tapering, sharply margined, at tip distinctly bristle-haired; its foremost free dorsal joints not depressed at base, and the fifth distinctly longer than each of the four preceding joints, which are equally long; legs not long; fore- and middle-tarsi 4-jointed, hind tarsi 5-jointed, and first joint of these almost twice as long as each of the three following equally long joints.

Myllaena species are lively, very agile, small or very small Staphylinids, which all live on damp or very wet ground; several species are numerous in alluvium. In North and Middle Europe about half a score species are found, and of these 5 are heretofore found in this country; a couple of the others, which possibly may be discovered yet, are included in the following.

Key to the Species.

1. Body black or brownish-black.....2.
- Body reddish-yellow, head and abdomen anteriorly however most often brownish-pitch. Elytra shorter than pronotum. L. 2-2.5 mm.....
..... 4. M. brevicornis Matth.
2. Next-last joints of antennae distinctly longer than broad..... 3.
- Next-last joints of antennae as broad as long 5.
3. Elytra as long as pronotum.....4.
- Elytra distinctly shorter than pronotum. L. 2.5-3 mm.:3. M. Kraatzii Sharp.

4. Posterior margin of pronotum inside corners distinctly incurved; abdomen strongly tapering. L. 2.5-3 mm.....1. M. dubia Gravh.
- Posterior margin of pronotum inside corners scarcely incurved; abdomen less densely tapering. Species somewhat smaller and narrower. L. 2-2.5 mm..... 2. M. intermedia Er.
5. Antennae distinctly thickened distally. L. 1.5-2 mm.:5. M. gracilis Matth.
----- (Page 286) -----
- Antennae not thickened distally.....6.
6. Elytra as long as pronotum. L. 1.5-2 mm6. M. minuta Gravh.
- Elytra shorter than pronotum. L. 1-1.2 mm.....7. M. infuscata Kr.
1. M. dubia Gravh.

(Gravh. Mon. 173; Erichs. Käf. Mk. Br. I, 383; Gen. Spec. Staph. 210; Kraatz Ins. D. II, 368; Thoms. Skand. Col. III, 15; Muls. et Rey Brévip. 1873, 49; Ganglb. Käf. M. II, 319).

One of the largest species, identifiable by elongate outer joints of the antennae, rather strongly convex pronotum, and tapering abdomen.

Black, feebly glistening, silky fine hair vestiture; tip of abdomen brownish; basal joint of antennae, mouth-parts and legs brownish red or pitch-brown.

Body anteriorly broad and rather strongly convex, abdomen very strongly tapering, entire dorsal side extremely finely and densely punctated; the head rather small; antennae spiculiform, the middle and next-last joints (4-10) all considerably longer than broad; pronotum posteriorly as broad as elytra, narrowing anteriorly and with rounded sides, hind corners slightly pulled back and fitting closely to humeri, posterior margin inside of these distinctly incurved; Elytra as long as pronotum. L. 2.5-3 mm.

Rather common in this country and everywhere on damp meadow and forest ground, also at lake shores in alluvium; distributed throughout the entire Europe.

2. M. intermedia Er.

(Erichs. Käf. Mk. Br. I, 383; Gen. Spec. Staph. 210; Kraatz Ins. D. II, 369; Thoms. Skand. Col. III, 16; Muls. et Rey Brévip. 1873, 62; Ganglb. Käf. M. II, 319).

Somewhat smaller and narrower than dubia, anteriorly more flatly convex, posteriorly less strongly tapering.

Black or brownish black, silky haired, dull; abdominal tip brownish-red; antennae brownish, their base and tip, mouth-parts and legs brownish-yellow or brownish red.

Body feebly fusiform, extremely finely and densely punctated; antennae spiculiform, thinner still than in preceding species, the middle and next-last joints at least $1\frac{1}{2}$ times as long as broad; pronotum flatly convex, posteriorly as broad as elytra, anteriorly slightly narrowing and with feebly rounded sides, hind corners almost rectangular, not pulled backward, and posterior margin inside these scarcely incurved; elytra as long as pronotum; abdomen tapering. L. 2-2.5 mm.

Distributed throughout Europe on damp ground and frequent in this country, often very numerous in alluvium at river and lake shores.

3. M. Kraatzii Sharp.

(Sharp Cat. Brit. Col. 1871, 10; Ganglb. Käf. M. II, 319. - glauca Aubé, Kraatz Ins. D. II, 1057. - elongata Muls. et Rey Brévip. 1873, 59).

Of same size as dubia, but more flatly convex and narrower anteriorly, also with more robust antennae and shorter elytra.

Brownish-black or brown, densely and very finely silky haired; abdominal tip brown-red, suture of elytra often reddish; antennae rust-red, their first joints, mouth-parts, and legs yellowish-red.

Body extremely finely and densely punctated; antennae more robust than in the two preceding species, their next-last joints however distinctly longer than broad; pronotum broader than elytra, hind corners obtuse and not pulled backward, posterior margin inside these not incurved; elytra distinctly shorter than pronotum and abdomen not strongly tapering posteriorly (Kraatz).
L. 2.5-3 mm.

Distributed in Middle Europe and England, but everywhere rare; also denoted in Norway (Vaerdalen); in this country supposedly found in Als (Wust-nei); presumably it may be found in other places in this country; according to Fowler (Col. Brit. Isl.) it favours the moor—like, wet ground, where it occurs in Sphagnum moss.

4. M. brevicornis Matth.

(Matth. Ent. Mag. V, 1838, 196; Muls. et Rey Brévip. 1873, 39; Ganglb. Käf. M. II, 320.- gracilis Heer, Kraatz Ins. D. II, 369; Thoms. Skand. Col. III, 16).

Easily identified by the color, comparatively broad pronotum and short elytra.

Reddish-yellow, very finely haired, feebly glistening; head and abdomen, with exception of abdominal tip, most often brownish, occasionally pitch-black.

Body extremely finely and densely punctated, oblong, feebly fusiform; antennae shorter and more robust than in dubia, however scarcely thickened distally, their next-last joints about as broad as long; pronotum proportionately large, rather strongly convex, broader than elytra, with rounded sides and obtuse, not retracted hind corners; elytra distinctly shorter than pronotum; abdomen smoothly and not strongly tapering. L. 2-2.5 mm.

Distributed in North and Middle Europe, but somewhat local in this country; most frequent in alluvium at the shores of lakes and watering places, also on swampy ground in forests under leaves.

5. M. gracilis Matth.

(Matth. Ent. Mag. V. 1838, 197; Ganglb. Käf. M. II, 320. - forticornis Kraatz Ins. D. II, 370).

A little larger than minuta, narrow and elongate, recognized especially by comparatively robust, toward tip distinctly thickened antennae.

Black or brownish-black, densely and finely gray-haired, dull; abdominal tip often brownish; antennae brown, their base, mouth-parts and legs yellow-brown.

Body extremely finely and densely punctated, their next-last joints at least as broad as long; pronotum as broad as elytra, flatly convex, anteriorly feebly narrowed, with slightly rounded sides and obtuse-angular, scarcely retracted hind corners; elytra as long as pronotum; abdomen rather strongly tapering. L. 1.5-2 mm.

Distributed in England and Middle Europe; in this country heretofore found only at Hillerød under leaves and in alluvium at forest ponds (Author 4, 1910).

6. M. minuta Gravh.

(Gravh. Mon. 174; Erichs. Käf. Mk. Br. I, 384; Gen. Spec. Staph. 211; Kraatz Ins. D. II, 369; Thoms. Skand. Col. III, 16; Muls. et Rey Brévip. 1873, 52; Ganglb. Käf. M. II, 320).

A very small species, almost only half the size of intermedia, but of a similar, flat convex shape, and with fine antennae.

Black or brownish black, very fine silky haired and feebly glistening; abdominal tip and the antennae brown; mouth-parts and legs brownish-yellow.

Body extremely finely and densely punctated; antennae fine, not thickened distally, their next-last joints as broad as long; pronotum posteriorly as broad as elytra and with obtuse-angular hind corners, anteriorly somewhat narrowing, with feebly rounded sides; elytra as long as pronotum, and abdomen rather strongly tapering. L. 1.5 mm.

Distributed throughout the greater part of Europe, and common in this country on all sorts of damp ground, most often very numerous in alluvium.

7. M. infuscata Kr.

(Kraatz Stett. Ent. Ztg. XIV, 1853, 373; Ins. D. II, 371; Muls. et Rey Brévip. 1873, 66; Ganglb. Käf. M. II, 321. - ? minima Kraatz Ins. D. II, 371).

Of size with or a little smaller than minuta, more uniformly broad, identified especially by the color and the short elytra.

Black-brown, finely and densely gray-haired, silky glistening; abdominal tip red-brown; antennae brown, mouth-parts and legs brownish-yellow.

The body extremely densely and finely punctated; antennae a little more robust than in minuta, the next-last joints about as broad as long; pronotum as broad as elytra, with obtuse-angular hind corners and feebly rounded sides, anteriorly a little narrowing, posterior margin inside corners indis-

tinctly incurved; elytra $\frac{1}{3}$ shorter than pronotum; abdomen only feebly tapering. L. 1-1.5 mm. ----- (Page 289)-----

Distributed in Middle Europe and England; in Denmark heretofore only found in alluvium at Lyngby Mose and on damp boggy ground at Hillerød (Auth. 4, 05). Probably more widely distributed, but perhaps often confused with the preceding species. M. minima Kr. is probably a form of infuscata with yellow antennae and still shorter elytra than this.

8. Division Gymnusina.

The head anteriorly snout-like prolonged; maxillary palpi very long, their second and third joints especially elongate; all tarsi 5-jointed.

To this only 1 genus.

46. Genus Gymnusa Gravh.

(Gravh. Mon. Col. Micr. 1806, 172; Erichs. Käf. Mk. Br. I, 380; Kraatz Ins. D. II, 372; Thoms. Skand. Col. II, 240; Muls. et Rey Brévip. 1873, 19; Ganglb. Käf. M. II, 321).

Body thick and rather convex, without side-bristles; the head (Fig. 100) vertically decurved and almost to the eyes imbedded in the pronotum, posteriorly rather broad, however considerably narrower than pronotum, anteriorly tapering and snout-like prolonged with an offset, rounded and rather broad labrum. In contrast to all other Aleocharini species, but in similarity with several Staphylinids, on vertex of the head with two small bristle-bearing punctures, which here are placed with considerable interval. The eyes are oblong, not protruding; temples and genae sharply margined; antennae filiform, their third joint shorter than the second, but not longer than the middle and next-last almost equally long joints, all much longer than

broad, distal joint only as long as the tenth; mandibles rather slender, each armed with a robust tooth inside the strongly curved tip; labrum large, strongly protruding, attached to clypeus by a free membrane; maxillary palpi very long, their second and third joints elongate, slender, of same length, the fourth extraordinarily fine and small, scarcely visible; labial palpi three-jointed, their first joint five times as long as the two following joints together.

Posteriorly pronotum fits closely to elytra and is here as broad as these, narrowing anteriorly, at middle convex, before hind corners flatly depressed; elytra as ~~elytra~~ ^{----(Page 290) ----} long as pronotum, with slightly arcuate sides, together broadly incurved posteriorly and each with an angular, small incision inside the outer corners; abdomen feebly tapering, rather thick, its two-three first free dorsal joints feebly depressed at base, and the fifth much longer than each of the preceding four equally long joints; legs rather short and slender, all tarsi 5-jointed, first joint of middle and hind tarsi as long as the two following joints together, tibiae armed with short, scattered spines.

The species live on wet or very damp, swampy ground, under leaves and in water moss. In Middle and North Europe 2 species are distributed, of which one is found in this country.

1. G. brevicollis Payk.

(Payk. Faun. Suec. III, 398; Erichs. Käf. Mk. Br. I, 381; Gen. Spec. Staph. 212; Kraatz Ins. D. II, 373; Thoms. Skand. Col. II, 241; Muls. et Rey Brévip. 1873, 22; Ganglb. Käf. M. II, 322).

Deeply black, with very fine and short, rather dense hair vestiture; head and pronotum strongly glistening; elytra and abdomen dull; first joint of antennae and the tarsi reddish.

The head almost smooth; pronotum (see above) anteriorly very finely and rather densely, posteriorly more distinctly punctated; elytra with extremely dense, rather fine scabrous punctation; abdomen very densely and rather finely punctated; posterior margin of its first four free dorsal joints densely set with short, uniformly long, pectinate, stiff and somewhat flat hairs. L. 5-5.5 mm.

In the ♂ posterior margin of the sixth free dorsal joint of abdomen very feebly incurved and the last ventral joint produced into a long tip. In the ♀ the posterior margin of the sixth free dorsal joint with an angular incision; the sixth ventral joint prolonged at middle and at each side slightly emarginate; the sixth ventral joint ending in two, closely placed long spines (thorn-shaped art-pencils: Cerci; cf. Ganglbauer; other authors: Erichson, Kraatz, Thomson, Mulsant, confuse the sexes).

On boggy ground under leaves, in alluvium and Sphagnum; distributed, but rare and most often singly.

G. variegata Kiesw. (Kraatz Ins. D. II, 374; Ganglb. Käf. M. II, 322) is most often a little smaller than brevicollis, and of more uniform breadth, with less densely punctated and more glistening abdomen; this as well as pronotum and elytra are yellow-gray haired in spots. - It is distributed in England, Central Europe and Finland, but is not likely to occur in this country.

2. Group Tachyporini.

(Erichs. Käf. Mk. Br. I, 1839, 385; Gen. Spec. Staph. 213; Kraatz Ins. Deutschl. II, 377. - Hypocypytina, Trichophyina, and Tachyporina Thoms. Skand. Col. III, resp. 109, 111 and 145. - Habrocériens, Tachyporiens, Trichophyens Rey, Brévip. 1883, resp. 1, 9, and 282. - Trichophyinae, Habrocerinae and Tachyporinae Ganglb. Käf. Mitteleur. 1895, II, resp. 324, 326, and 329).

Pronotum behind fore-coxae is hidelike, and its spiracula visibly exposed. Antennae 11-jointed, only exceptionally (Hypocypytus) 10-jointed, inserted beneath side-margin of forehead in front of eyes (Fig. 101).

The body is more or less fusiform, ordinarily more strongly narrowed posteriorly than anteriorly; the head is embedded in pronotum, and only exceptionally (Trichophya) constricted posteriorly forming a short, broad neck; eyes not strongly protruding; the antennae (see above) slender and oftenest only feebly thickened outwardly toward the tip, occasionally filiform and whorl-haired (Trichophya and Habrocerus).

Pronotum is large, broadest posteriorly, narrowed forwardly, and anteriorly encircling the embedded part of the head, its sides distinctly angular. Elytra oftenest reach out over the metasternum, and has (except of Trichophya) a fine, more or less sharp margin from humerus to the hind corner, whereby their over-or inturned side-pieces (Epipleura) are bounded from the dorsum; occasionally the suture-stripe is lacking (div. Tachyporina). The abdomen is more or less gradually tapering to a point, often with angular sides more rarely round (Conosoma); it is not curved upward like that of Aleocharini, but occasionally downward and inward. The fore-coxae

are peg-formed and protruding, hind-coxae rather broad, contiguous in middle, their coxae-rings (Trochanters) supporting (when the trochanter is rather large, lying downward on the upper part of the femur, it is termed supporting); the tibiae oftenest with spines; the tarsi of Hypocypsus alone 4-jointed, all others 5-jointed.

Of the larvae of Tachyporini only few are known, belonging to genera Habrocerus, Leucoparyphus, Tachinus (Schiodte) Tachyporus (Schiodte) and Conosoma.

The majority of our species Tachyporini are by their form of body easily identified for the group. This can be divided into five divisions, by the characters of head, antennae, elytra, and tarsi, of these divisions the two first are often found placed as separate groups (cf. Thoms., Rey and Ganglb.)

Key to Divisions.

1. Antennae from the third joint filiform and whorl-haired ...2.
 - Antennae not filiform, feebly or more distinctly thickened outward..... 3.
2. Head posteriorly constricted, protruding. Elytra without side-margin 1. Trichophyina.
 - Head posteriorly not constricted, imbedded in pronotum. Elytra with sharp side-margin from humerus to hind-corner..... 2. Habrocerina.

3. Antennae 10-jointed. All tarsi 4-jointed..... 3. Hypocypina.
- Antennae 11-jointed. All tarsi 5-jointed..... 4.
4. Elytra without suture-stripe. Temples and genae not margi-
nated 4. Tachyporina.
- Elytra with suture-stripe. Temples and genae marginated*)..
..... 5. Bolitobiina.

1. Division Trichophyina.

Antennae from the third joint filiform and whorl-haired,
11-jointed. The head posteriorly constricted, porrect.
Elytra without side-margin. Tarsi 5-jointed.

To this only one genus.

47. Genus Trichophya Mannh.

(Mannerh. Brach. 73; Kraatz Ins. D. 11, 388; Rey Brevip. 1883, 283; Ganglb. Kaf. M. II, 325. - Trichophyus Erichs. Kaf. Mk. Br. I, 402; Gen. Spec. Staph. 267; Thoms. Skand. Col. III, 112).

This peculiar genus, of which the antennae show agreement with the following genus, Habrocerus, and with family Trichopterygidae, differ from the other Tachyporini namely by this, that the head posteriorly is constricted, and elytra, like those of genera Aleocharini, without side-margin.

Body scarcely convex; head narrower than pronotum, triangle-shaped, porrect, and back of the rather small, protruding eyes constricted to form a short, broad neck; antennae fully as long as head and pronotum together, inserted far in front of eyes, their first two joints very thick, the first conical, the second

*) meaning - angulose or with ridges, or margins- translator.

rounded, all the following joints extremely filiform, elongate, long whorl-haired, from the sixth joint spool-formed (broad fusiform); maxillary palpi elongated, their fourth joint as long, and about as thick as the third, tapering to a point.

Pronotum at middle nearly as broad as elytra, much broader than long, with rounded sides, and anteriorly a little more narrowed than posteriorly, slightly convex, in front of the rounded-off-obtuse hind corners obliquely depressed, its sides and posterior margin finely marginate; elytra $1\frac{1}{2}$ times as long as pronotum, without side-margin, their hind-margin within the outer corners not undulated; abdomen posteriorly tapering to a point, its first three free dorsal joints feebly depressed at base, the fifth longer than the fourth; the legs rather slender, tibiae with fine hair; tarsi 5-jointed,

first joint of hind-tarsi as long as the following three joints together.

The one sole species of this genus is distributed throughout the greater part of Europe, and is also found here (Denmark).

1. T. pilicornis Gyllh.

(Gyllh. Ins. Suec. II, 417; Erichs. Käf. Mk. Br. I. 403; Gen. Spec. Staph. 268; Kraatz Ins. D. II, 390; Thoms. Skand. Col. III, 112; Rey Brévip. 1883, 285; Ganglb. Käf. M. II, 326).

In form of body not unlike Phloeocharis subtilissima, but at least twice as large as same, and is however easily identified by the above stated characters of the genus.

Black, somewhat shiny, finely gray-haired; elytra and pronotum often brown or brownish on sides; antennae, mouth-parts, and legs brownish-red or brownish-yellow.

Head and pronotum with rather fine and sharp punctation, elytra with very dense, rough punctation, and abdomen with dense and very fine punctation, its sides and tip with long bristle-hair. L. 2.5-3 mm.

In ♂ the four first anterior tarsal-joints are distinctly dilated.

Very rare; particularly in gnaw-crumblings under the bark of old trees and stumps, also underneath heaps of twigs, and in mouldy saw-dust (Hillerød, Maribo, Silkeborg and other places).

2. Division Habrocerina.

Antennae from the third joint filiform and whorl-haired, 11-jointed. Head posteriorly not constricted. Elytra with sharp side-margin and thereby terminated side-pieces (Epipleura). Tarsi 5-jointed.

To this only 1 genus.

48. Genus Habrocerus Er.

(Erichs. Käf. Mk. Er. I, 400; Gen. Spec. Staph. 242; Kraatz Ins. D. II, 391; Thoms. Skand. Col. III, 146; Fey Brevip. 1883, 2; Ganglb. Käf. N. II, 326).

In the characteristics of the antennae Habrocerus is closely related to Trichophya, but for the rest is more nearly associated with the true Tachyporini.

Body is fusiform, flat convex; head bent down and almost to the eyes embedded in pronotum; eyes rather large, and somewhat convex; antennae as long as head and pronotum together, their first

and second joints thick, oblong, the following filiform, long, whorl-formed-bristle-haired, from the fifth spool-formed; maxillary palpi long, their third joint shorter than the second and fourth, this long stiletto-formed tapering to a point (**styliform**).

Pronotum posteriorly as broad as elytra, anteriorly roundedly narrowing with rounded-off fore- and hind-corners, rather convex, with scattered punctures and robust bristle-hair along the margins; elytra $1/3$ longer than pronotum, flat convex, with sharp marginal ridges on sides and horizontally bent-in side-pieces (Epipleura), the outer hind-corners rounded off; abdomen rather tapering to a point, with easily contracting joints, its foremost dorsal joint not depressed at base; sides and tip with long and robust bristle-hair. Hind-coxae is, in opposition to all other Tachyporini, triangular; legs fine, tibiae finely haired, tarsi 5-jointed, first joint of posterior tarsi as long as the following three joints together.

The only one European species of this genus is widely distributed in Europe and also found in Denmark.

1. H. capillaricornis Gravh.

(Gravh. Mon. 10; Erichs. Käf. Mk. Lr. I, 401; Gen. Spec. Staph. 243; Kraatz Ins. D. II, 393; Thoms. Skand. Col. III, 146; Rey Brévip. 1883, 4; Janglb. Käf. M. II, 388).

The form nearest like a low convex Tachyporus, very easily identified by the antennae (see above) and the other described generic characteristics, and by the sex-peculiarities of ♀ and ♂.

Black, pitch-black or pitch-brown; head, pronotum, and elytra almost naked, shiny; abdomen finely haired, with somewhat modified shine; pronotum, tip of abdomen, and posterior margins of its joints often reddish-brown; antennae, mouth-parts, and legs are brownish yellow.

Head and pronotum smooth, the latter only along margins endowed with single bristle-punctures, the rest entirely without punctation, elytra with scattered and indistinct punctation, **surface finely aciculate**; abdomen with very fine and dense punctation. L. 3-3.5 mm.

Of one of the sexes ($\sigma^?$) the next-last dorsal joint of abdomen is strongly **elongate**, covering the last joint, and at tip broadly truncated with rounded corners; of the other sex ($\phi^?$) contrariwise not elongated and at tip entirely rounded off, the last joint uncovered, strongly tapering to a point.

Distributed in this country, and particularly in woodland regions not infrequent in gnaw-crumbles under the bark of old trees and stubs, beneath leaf-mould and heaps of twigs, and in piles of leaves in gardens and parks.

3. Division Hypocryptina.

Antennae 10-jointed. All tarsi 4-jointed.

To this only 1 genus in this country.

49. Genus Hypocryptus Mannh.

(Mannerh. Brach. II, Erichs. Käf. Mk. Br. I, 387; Gen. Spec. Staph. 214; Kraatz Ins. D. II, 382; Thoms. Skand. Col. III, 110;

Rey Brévip. 1883, 10; Janglb. Käf. M. II, 331).

The body is very small and short, anteriorly strongly or rather strongly convex, posteriorly strongly tapering to a point; head hypognathous, short and broad, though narrower than pronotum, and posteriorly deeply embedded in same; eyes somewhat protruding; antennae proportionally long and rather slender, only 10-jointed, with fine bristle-hair, their first joint very thick, the second thicker and longer than **middle ones** (3-7), which often are small, and considerably smaller than the three last joints, which form a feebly pronounced club, in which the distal joint is as large as the two other joints together, maxillary palpi long, their third joint as long as the second, on inner side swollen, the fourth very small, needle-point-formed.

Pronotum is short and broad, strongly convex; posteriorly joined closely to elytra and is here about as broad as these, but anteriorly strongly rounded off narrowed, so that sides and fore-margin fit in same rounding. Scutellum is not visible; elytra convex, with sharp side-ridges, with rounded off outer hind-corners and obtuse-angular suture-corners; abdomen oftenest strongly conical tapering, with sharp side ridges; after the animal's death it is often so greatly contracted and drawn in under elytra, that the species thereby gets a rounded appearance, like that of Agathidium. Legs rather short and thin, tibiae haired, all tarsi 4-jointed, first joint of **middle** and posterior tarsi longer, or as long as the other three together. - First joint of the anterior

tarsi of ♂ more or less dilated, and the next-last ventral joint of abdomen as a rule with a triangular incision.

The species Hypocyptus live mostly on moist or half-moist ground beneath plant-surface; and are therefore often found in alluvium, but also at rotting plant-parts, in plant-dung and in gnaw-crumblings under bark. In North- and Middle-Europe 6 species are found, of which 4 or 5 in Denmark.

Key to Species.

1. Antennal seventh joint a little longer and thicker than the sixth; club not distinctly set off...Antennae and legs brownish yellow. L. 1-1.5 mm.: 1. H. longicornis Payk.
- Antennal seventh joint not longer than the sixth; club rather distinctly set off 2.
2. Antennae dark, often reddish at base3.
- Antennae entirely reddish-yellow..... 4.
3. Antennal seventh joint a little shorter than the sixth. First joint of anterior tarsi of ♂ rather strongly dilated.
L. 1-1.2 mm.2. H. laeviusculus Mannh.
- Antennal sixth and seventh joints same length, rounded. First joint of anterior tarsi of ♂ very feebly dilated. L. 0.7 mm.
.....3. H. ovulum Heer.
4. Tip of abdomen brownish, elytra black. L. 0.6-1 mm.
.....4. H. seminulum Er.
- Tip of abdomen yellow; middle of elytra brownish-red or yellowish-red. L. 1-1.5 mm. 5. H. discoideus Er.

1. H. longicornis Payk.

(Payk. Faun. Suec. III, 340; Erichs. Käf. Mk. Br. I, 388; Gen. Spec. Staph. 218; Kraatz Ins. D. II, 384; Thoms. Skand. Col. III, 110; Rey Brévip. 1883, 14; Ganglb. Käf. M. II, 332).

Largest species of the genus, anteriorly strongly convex, and the body almost egg-shaped, is for the rest identifiable by the structure of the antennae.

Shiny black, very fine and sparsely haired; tip of antennae and abdomen often brownish; side-ridges of pronotum, antennae, mouth-parts and legs brownish yellow.

Antennae are rather long, longer of ♂ than of ♀, from the middle smooth and not strongly thickened outwardly, with a three-jointed, but not sharply set off club, inasmuch as the seventh joint, which is a little longer and more robust than the sixth, at the tip is about as thick as the eighth at base; the distal joint is long and tapering. Pronotum is strongly convex, anteriorly rounded off, at base as broad as elytra, and with almost rectangular hind-corners, forwardly strongly roundedly-narrowing, together with the broad head entirely unpunctated and smooth; elytra are $1\frac{1}{2}$ times as long as pronotum, convex, with extremely fine, not dense punctation; abdomen very strongly tapering, with sparse and extremely fine punctation. L. 1-1.5 mm.

The first joint of anterior tarsi of ♂ very feebly dilated, the next-last ventral joint of abdomen with deep emargination at tip.

Distributed in Europe, rather rare in Denmark; in alluvium,

and on damp woodland- and moor-ground under foliage and moss.

2. H. laeviusculus Mannh.

(Mannerh. Brach. 58; Erichs. Käf. Br. I, 389; Jen. Spec. Staph. 216; Kraatz Ins. D. II, 387; Thoms. Skand. Col. III, 111; Rey Brévip. 1883, 20; Ganglb. Käf. M. II, 333).

Ordinarily considerably smaller, and namely less broad than the preceding species, easily identified by the dark color of antennae and legs.

Black, rather shiny and finely haired; distal side-ridges of pronotum oftenest translucid brownish yellow; elytra occasionally brownish; antennae, mouth-parts, and legs pitch-black or pitch-brown, the first joints nearest basal joint, particularly the second, oftenest lighter.

Head and pronotum with extremely fine, open punctation; the ~~seventh~~ antennal joint a little shorter and not thicker than the ~~sixth~~ but distinctly finer than the eight, so that the antennal club, consisting of the more strongly thickened three last joints, thereby becomes more sharply set off than that of longicornis. Hind-corners of pronotum are obtuse-angularly rounded off; elytra $1\frac{1}{2}$ times as long as pronotum, very finely and rather densely punctated, surface extremely feebly shagreened; abdomen strongly tapering, punctation about same as of elytra. L. 1-1.2 mm.

First joint of anterior-tarsi of ♂ strongly dilated, that of middle-tarsi less strongly dilated; tip of next last ventral joint

triangularly emarginated.

Our most common species, distributed throughout entire Europe; in alluvium from meadows and moors, under leaves on half-moist woodland ground and in plant-dung in gardens.

3. H. ovulum Heer.

(Heer Faun. Helv. I, 285; Rey Brévip. 1883, 28; Ganglb. Käf. M. II, 333. -? nigripes Heer. - pygmaeus Kraatz Ins. D. II, 388. - laeviusculus Redtb. Faun. Austr. ed. III, 163).

Oftenest smaller than the preceding species, but of same colour; hind-corners of pronotum almost rect-angular and first joint of anterior-tarsi of ♂ scarcely dilated. L. 0.5 - 1 mm.

Distributed in Middle-Europe, but not so far with surety identified here in Denmark.

4. H. seminulum Er.

(Erichs. Käf. Mk. Br. I, 389; Gen. Spec. Staph. 217; Kraatz Ins. D. II, 387; Rey Brévip. 1883, 30; Ganglb. Käf. M. II, 333. - pulicarius Erichs. Gen. Spec. Staph. 217).

From laeviusculus, which in form and size etc. it comes nearest, it is easily distinguished by the color of antennae and legs, also by the finer, less dense punctation of elytra.

Black or pitch-black, shiny and finely haired; side-ridges of pronotum brownish-yellow; abdominal tip reddish-brown; antennae, mouth-parts and legs reddish-yellow.

Head and pronotum are almost smooth or very indistinctly punctated; antennal sixth and seventh joint of the same length and same thickness, club distinctly set off; hind-corners of pronotum almost rect-angular; elytra $1/3$ longer than pronotum, these together with

the not very strongly tapering abdomen with particularly fine, not dense punctation. L. 0.6-1 mm.

First joint of anterior-tarsi of ♂ strongly dilated, abdominal next-last ventral joint emarginate at tip.

Distributed in Europe, very rare in Denmark (Valloe, Lethrabort, Svenstrup, Søborg shore, Nykøbing F., Sønderborg); in rotten tree-stubs and sponges, also in alluvium.

5. H. discoideus Er.

(Erichs. Käf. Mk. Er. I, 366; Gen. Spec. Staph. 210; Knechtz Ins. D. II, 388; Thoms. Skand. Col. III, 110; Key Lévêq. 1886, 33; Janglb. Käf. M. II, 334).

Easily identified by the color of elytra, antennae and legs.

Pitch-black, shiny, rather long and densely haired; sides of pronotum and tip of abdomen rather broad brownish-yellow; elytra brownish-red or yellowish-red, at base and on sides dark; antennae, mouth-parts and legs reddish-yellow.

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Head and pronotum with very fine and not dense punctation; antennal club distinctly set off, the seventh joint a little shorter than the sixth; hind-corners of pronotum rounded off; elytra 1/3 longer than pronotum, these together with the not strongly tapering abdomen with fine and rather dense punctation. L. 1-1.5 mm.

First joint of anterior-tarsi of ♂ dilated, and abdominal next-last ventral joint emarginate at tip.

Rare and local; in alluvium and marsh-like ground; where it appears it can at times be found in numbers (v. Lyngby Lake, Freder-

rikssdal and several other places in Northsjällana, Cuense). Middle- and North-Europe.

4. Division Tachyporina.

Antennae 11-jointed. Temples and genae without ridges. elytra without suture-stripe. tarsi 5-jointed.

To this 5 genera in Denmark.

Key to Genera.

1. Abdomen without ridges, round, conical. Head and pronotum, like the rest of the body, finely haired.....50. Conosoma Kr.
- Abdomen with ridges. Head and pronotum not haired2.
2. Last joint (fourth) of maxillary palpi as long as or longer than the next-last 3.
- Last joint of maxillary palpi small, awl-tip-formed, shorter than the next-last 4.
3. Mesosternum with a fine carina in middle-line. Anterior tarsi of both sexes simple. (Posterior marginal ridge of elytra in our species yellowish-white)..... 51. Leucoparyphus Kr.
- Mesosternum without carina. Three first joints of anterior-tarsi of ♂ dilated 52. Tachinus Gravh.
4. Antennae toward tip feebly thickened and not or very feebly flatly-depressed 53. Tachyporus Gravh.
- Antennae toward tip rather strongly thickened and flatly-depressed 54. Lamprinus Heer.

50. Genus Conosoma Kr.

(Kraatz Ins. D. II, 431; Thoms. Skand. Col. III, 147. - Conurus Steph. Ill. Brit. V, 188; Erichs. Gen. Spec. Staph. 218; Rey Brévip. 1883, 41; Janglb. Käf. M. II, 354).

Body is broadest anteriorly and obtusely rounded, rather strongly convex, posteriorly conically tapering, entirely clothed with fine, silky shining hair; head upto the eyes embedded in pronotum; temples and genae without ridges; antennae slender, feebly thickened outward, their second joint shorter than the third, this as well as the fourth and fifth rather elongated, the following middle and next-last joints short, gradually thickened, distal joint obliquely tapering; the distal joint of maxillary palpi awl-tip-formed, much finer and shorter than the thickened third joint.

Pronotum is large, convex, posteriorly as broad as or broader than elytra and fitting close to these, anteriorly rounded-narrowing,

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with hind-corners feebly pulled backward, posterior margin inside of these oftenest slightly emarginate, the sides without outstanding bristle-hair; elytra broadest anteriorly, feebly tapering posteriorly, convex, with fine, sharp side-ridges, only seldom with single, outstanding side-bristles, posterior margin inside the outer corners not curved outward; abdomen strongly cone-shaped tapering, round, without side-ridges, at tip bristle-haired; legs slender; outer margin of anterior tibiae with a row of comb-formed densely set, very short spines, middle- and posterior-tibiae on middle and at tip with

single spine or uncus; tarsi all 5-jointed; three first joints of anterior tarsi more or less dilated, the fourth small; middle- and posterior-tarsi slender, oftenest longer than tibiae, their first joint as long as the two-three following joints together.

The three first joints of anterior-tarsi of ♂ more strongly dilated than those of ♀ ; abdominal next-last ventral joint with an incision at tip. The sixth free dorsal joint of ♀ is divided into four tips, that of ♂ not divided.

The species Conosoma are swift, lively animals. They live in wood-crumblings in hollow trees and stubs as well as under loose bark, also in mouldy leaves and under twigs, rarely on fungi. . Of middle- and North-Europe's 7 species the 6 are found in Denmark.

- The oldest name of the genus Conurus (Stephens 1832) cannot be applied, as it is found formerly to have been used as the name of a genus of parrot (parrakeets)

Key to Species.

1. Sides of elytra with five-seven robust outstanding bristle-hair. Abdomen strongly bristle-haired. Elytra black, a rather sharply restricted oblique-spot from humerus inwardly as well as the suture red. l. 2-2.5 mm... 1. C. bipunctata Gravh.
- Sides of elytra without distinct bristle-hair 2.
2. Elytra with a reddish-yellow or red spot on base 3.
- Elytra black-brownish or lighter without spots 4.
3. Body strongly convex. Pronotum entirely black or the posterior corners narrow reddish. Elytra with a sharply restricted,

- square yellowish-red spot on base. L. 4-5 mm
..... 2. C. bipustulata Gravh.
- Body low convex. Posterior corners of pronotum broad brownish yellow. Elytra with a large, blurred brownish-yellow spot on base. L. 5 mm..... 3. C. litoria Linn.
4. Elytra distinctly longer than pronotum 5.
- Elytra a little shorter than pronotum. L. 2-2.5 mm.
..... 6. C. pedicularia Gravh.
5. Sides of pronotum in front of posterior corners rather strongly rounded. L. 3.5-4.5 mm..... 4. C. pubescens Er.
- Sides of pronotum in front of posterior corners feebly rounded.
Species smaller. L. 2.5-3 mm.5. C. immaculata Steph.

1. C. bipunctata Gravh.

(Gravh. Micr. 133; Erichs. Käf. Mk. Br. I, 392; Gen. Spec. Staph. 230; Kraatz Ins. D. II, 438; Thoms. Skand. Col. III, 148; Rey Brévip. 1883, 64; Ganglb. Käf. M. II, 356).

A small species; identifiable by the color of elytra and outstanding side-bristles. (Page 300)

Strongly convex, black, shining, rather finely haired; elytra black with a large red, arch-shaped spot from humerus to the suture, and oftenest along this narrowed to the tip; tip of abdomen brownish-red, antennal base and tip as well as legs reddish-yellow.

Antennae are scarcely as long as head and pronotum together, rather strongly thickened outward, the next-last joints distinctly truncate; pronotum as broad as elytra, with scattered and extremely fine punctation; elytra $1/3$ longer than pronotum, with partic-

ularly fine and very dense punctation, along side-margin - in contrast to all the following species - with five-seven long, robust outstanding bristle-hair; entire abdomen with particularly fine, and dense punctation, along sides, at tip, and partly also on back-margin of joints with long and robust, outstanding bristle-hair. L. 2-2.5 mm.

Rare or very rare, local. In rotten, tindery alder-trunks, in hollow trees and stubs, also under loose bark in gnaw-crumbles (Bognaes Forest; Vang Forest and Agdrup Thicket in Vendsyssel etc. auth.). Distributed particularly in North- and Middle-Europe, but also found south and east of the Mediterranean (Algeria, Syria).

2. C. bipustulata Gravh.

(Gravh. Micr. 132; Erichs. Gen. Spec. Staph. 223; Kraatz Ins. D. II, 437, Thoms. Skand. Col. III, 148; Rey Brévip. 1886, 41; Janglb. Käf. M. II, 386).

Somewhat larger and particularly broader than pubescens, more convex than litorea, for the rest easily identified by the color.

Strongly convex, black, rather shiny, fine, rather densely yellow-lustre haired; posterior corners of pronotum narrow reddish; elytra anteriorly between humerus and scutellum with a bounded, rather square or posteriorly somewhat curvate yellowish-red spot; the next-last abdominal joint, or at least its back-margin, base and tip of the antennae as well as mouth-pats and legs reddish-yellow or yellowish-red.

Antennae slender, but not as long as those of litoria, their next-last joint of ♀ feebly, of ♂ scarcely transversely-truncate,

Pronotum a little broader than elytra, with rather dense and extremely fine, scarcely visible punctation; elytra a very little longer than pronotum, these as well as abdomen with fine and dense punctation, the latter on sides and at tip with long and robust, outstanding bristle-hair. L. 4-5 mm.

Distributed in North- and Middle-Europe, but in Denmark very rare and local. In former times it was found in the woods at Sorø "in masses on one with tinder overgrown beech-stub" (Pastor Fr. Jakobsen); later, likewise on tinders, at Jyderup and in the woods at Skarrit-Lake, also at Naesbyholm (Koch, Løvendal, 16. 5. 75 and 6. 6. 81).

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3. C. litorea Linn.

(Linné Syst. Nat. ed. X. 422; Erichs. Käf. M. Br. I, 390; Gen. Spec. Staph. 219; Kraatz Ins. D. II, 433; Thoms. Skand. Col. III, 148; Rey Brévip. 1883, 44; Ganglb. Käf. M. II, 356).

Somewhat larger and broader, particularly longer than pubescens and lower convex, in connection with this easily identified by the color and proportionally long elytra.

Blackish-brown, particularly fine, and densely haired, modified silky shine; posterior corners of pronotum and a large, somewhat blurred spot on elytra anteriorly from the humerus inward toward the suture brownish-yellow; back-margins of abdominal joints translucent narrow reddish-brown; base and tip of antennae, mouth-parts and legs reddish-yellow.

Antennae are long and fine, longer than head and pronotum to-

gether, very feebly thickened outward, their next-last joints fully as long as broad; pronotum rather low convex, amply as broad as elytra, extremely fine and very densely punctated, surface with extremely fine transverse aciculations; elytra $1\frac{1}{2}$ times as long as pronotum, this together with abdomen extremely finely and extremely densely punctated; the latter only at tip with long bristle-hair. Middle- and hind-tarsi are peculiarly long, much longer than tibiae. L. 5 mm.

Distributed in Europe, particularly in wooded regions, and not rare in Denmark; in deep mouldy leaf-mounds, hollow trees and under twig-gatherings, also often numerous in larger gardens in plant-waste.

4. C. pubescens Gravh.

(Gravh. Micr. 130; Erichs. Käf. Mk. Br. I, 390; Gen. Spec. Staph. 221; Kraatz Ins. D. II, 435; Thoms. Skand. Col. III, 147; Rey Brévip. 1883, 49; Ganglb. Käf. M. II, 357).

A medium-sized, strongly convex species, without the conspicuous color-spots of the preceding species, but however varies in color after development and maturity.

Very fine and rather densely haired, with somewhat silky shine; either entirely brownish-black or blackish-brown with brownish-red elytra, or entirely brownish-red, occasionally brownish-yellow; elytra often lighter than head and pronotum; back-margins of abdominal joints narrow reddish; base and tip of antennae, mouth-parts, and legs reddish-yellow.

Antennae are slender, feebly thickened outward, their next-last joint as broad as long; pronotum strongly convex, broader than elytra, sides posteriorly in front of posterior corners rather strongly rounded, these obtuse-angular and back-margin inside of them slightly emarginate, dorsal side with extremely fine and very dense punctation, the surface with extremely fine transversal aciculations; elytra $1/3$ longer than pronotum, together with abdomen with very fine and dense punctation, only at tip of the latter with long bristle-hair. L. 4-4.5 mm. (Page 302)

Common everywhere in woods and parks under foliage, in old stumps and hollow trees, also under dry twigs, in plant-waste and at fungus. Distributed in Europe.

5. C. immaculata Steph.

(Steph. Ill. Brit. V, 190; Ganglb. Käf. M. II, 357.- fuscula Erichs. Käf. Mk. Br. I. 391; Gen. Spec. Staph. 229; Kraatz Ins. D. II, 436; Thoms. Skand. Col. IX, 298; Rey Brévip. 1883, 53).

In form, color and punctation entirely like pubescens, but considerably smaller than this, oftenest only half as large; antennae proportionally shorter and outwardly somewhat more robust, their next-last joint feebly truncated; sides of pronotum in front of posterior corners only feebly rounded; these almost rectangular and back-margin inside of them not distinctly curved outwardly; bristle-hair of abdominal tip more robust. L. 2.5-3 mm.

It lives under same conditions as pubescens, and distributed with same, but much less common.

6. C. pedicularia Gravh.

(Gravh. Micr. 133; Erichs. Käf. Mk. Br. I, 392; Gen. Spec. Staph. 230; Kraatz Ins. D. II, 436; Thoms. Skand. Col. III, 148; Rey Brévip. 1883, 58; Ganglb. Käf. M. II, 357).

Our smallest species, closely allied to immaculata; besides by its smallness can be identified especially on the entirely yellow antennae and proportionally short elytra.

Black or pitch-black, rather shiny, with fine silken-lustrous hair; fore- and hind-margin of pronotum also back-margins of elytra and abdominal joints translucent reddish-brownish or brownish-yellow; antennae, mouth-parts, and legs reddish-yellow. Immature animals are yellowish-brown or brownish-yellow (v. livida Er.).

Antennae are rather short, their next-last joint feebly truncate; pronotum posteriorly a little broader than elytra and with almost rectangular posterior corners, convex, with particularly fine and rather dense punctation, surface (background) extremely finely aciculated; elytra a little shorter than pronotum, together with abdomen with very fine and dense punctation, sides and tip of the latter with outstanding bristle-hair. L. 2-2.5 mm.

Distributed in Europe, but not frequent in Denmark; on marshy ground, in tinder on stumps and hollow trees; also on woodland leaf-mould.

51. Genus Leucoparyphus Kr.

(Kraatz Ins. D. II, 393; Ganglb. Käf. M. II, 335. - Cilea Duval, Thoms. Skand. Col. III, 153; Rey Brévip. 1883, 117).

Very closely allied to the following genus, Tachinus, from which

it differs mainly by this, that mesosternum in middle-line has a very fine carina, that first joint of hind-tarsi is elongated, as long as the following three joints together, where that of Tachinus is short, and that - - - - (Page 303) - - - the three first joints of ♂ are not dilated. Abdominal sides and tip with robust, outstanding bristle-hair.

To this 1, widely distributed European species, which is also found here in Denmark.

1. 1. silphoides Linn.

(Linne' Syst. Nat. I, 2, 684; Erichs. Käf. Lk. Br. I, 396; Gen. Spec. Staph. 245; Kraatz Ins. D. II, 398; Thoms. Skand. Col. III, 153; Rey Brévip. 1883, 119; Ganglb. Käf. M. II, 336).

In connection with the above mentioned, most outstanding generic characters particularly identifiable by the color of elytra.

Black, shining; sides of pronotum rather broadly, its fore- and hind-margin very narrowly yellow; elytra yellow or whitish-yellow, their base with scutellum, sides, and an oblong, rounded, with the basal color connected middle-spot black or brownish-black; tip of abdomen often yellowish; base of antennae, mouth-parts, and legs reddish-yellow. In the case of dark animals the yellow color of elytra is often less predominating than the black.

Head and pronotum are without punctation, but the surface with extremely fine transverse-aciculations, as well as elytra naked. The head is broad; antennae slender, their third joint longer than the second, the fourth and the following densely pubescent, the middle-

ones distinctly, the next-last very little longer than broad. Pronotum is posteriorly as broad as elytra, broader than long, anteriorly feebly, roundedly narrowing; elytra only a little longer than pronotum, slightly convex, extremely fine and rather densely punctated, along the sides and particularly at tip provided with long, robust bristle-hair. L. 3-4 mm.

The sixth free dorsal joint of abdomen in both sexes is deeply divided into six long tips, of which each of the four side-tips end in a very long, robust bristle-hair, the two middle tips with a very fine spine; the incision between the middle-tips is less deep in ♂ than in ♀. The fifth ventral abdominal joint of ♂ is rather deeply and broadly emarginated, the sixth deeply cleft into two slightly curved horn-like processes, in the ♀ divided into six tips.

Distributed, and is here not infrequently found in horse-manure, and plant-waste, at times numerous in fertilizer around hothouse-boxes.

52. Genus Tachinus Gravh.

(Gravh. Micr. 134; Erichs. Kaf. Mk. Br. I, 396; Gen. Spec. Staph. 244; Kraatz Ins. D.II, 396; Ganglb. Kaf. M.II, 337. - Tachinus and Drymoporus Thoms. Skand. Col. III, 154, 159; Rey Brevip. 1883, 122, 168).

The body (Fig. 101) is oftenest fusiform, rather low convex,*) posteriorly more tapering than anteriorly, rarely of even breadth; thorax naked, the abdomen extremely fine and sparingly haired; the head short and broad, ----- (Page 304) ---- deeply embedded in pronotum, with somewhat protruding eyes, the temples and genae without ridges; antennae rather long and slender, the first four joints

*) author uses term flat convex.

shiny, the following densely pubescence, the third joint distinctly longer than the second, the fourth small, and smaller than the fifth, the middle and next-last (5-10) about of same length, reversely conical; maxillary palpi somewhat stretched, all four joints of same thickness, the last as long as the second, and often twice as long as the third.

Pronotum is rather large, broader than long, posteriorly oftenest as broad as elytra, anteriorly roundedly-narrowing, low convex, without marginal bristles; elytra is longer than pronotum, and almost covers the third dorsal joint of abdomen, their sides rather parallel, without outstanding bristles; abdomen tapering, rarely of almost same breadth, its sides oftenest only nearest the tip with single bristle-hairs; the first two-three entirely free dorsal joints have on middle two small, often indistinct, obliquely placed, linear, dull hair-spots, the fifth is much longer than the fourth; mesosternum in contrast to Leucoparyphus without carina on middle-line. The legs are rather long, tibiae spiniferous, tarsi all 5-jointed, first joint of posterior tarsi rather short, scarcely longer than the second, three first anterior tarsal joints of ♂ dilated.

Fig 101. Tachinus rufipes De Geer. ♂ .

Abdominal sex-characters are distinctly developed, uniform throughout of each specifically, yet though with lesser variations within the species. The abdominal, entirely free, sixth dorsal joint of ♂ is at middle elongated into a rather broad lobe, which at tip is convex, emarginate, or insiced, and which at each side has a

much shorter lobe, or an obtuse-angular or tooth-formed process, provided with a very long bristle-hair; on ventral side the first ventral joint of same sex has at base a short carina, the fifth more or less emarginate, the sixth very deeply cleft into two horn-formed and slightly curved parts. The sixth free dorsal joint of ♀ is either divided into four long tips, or in two long, bristle-bearing side-lobes and a broad middle-lobe, which may be undivided broad-tipped, or with a deep incision divided into two narrow teeth; the sixth ventral joint is divided into six lobes, of which the two middle-ones are broadest, with convex tip and with fine unci in tip, the others narrow, styliiform and with a very long bristle-hair at tip.

The species Tachinus is found particularly at decaying plant-matter, carion and manure, also at outflowing tree-juices. About a score of species are distributed in Middle- and North-Europe, and of these, 11 are heretofore found in Denmark. An other couple from the nearest neighbouring countries are included in the following.

Key to Subgenera and Species.

1. Abdomen from base smoothly, more or less strongly tapering.

Elytra not with row-punctation: subgenus Tachinus s. str...2.

- Abdomen uniformly broad, only tapering at distal joint. Elytra

with row-punctation at middle: 2. subg. Drymoporus Thoms.-

Black; surface of dorsal side finely transversally acic-

- ulated. L. 8-10 mm.14. T. elongatus Lyllh.
2. Each of the abdominal free joints provided with outstanding
marginal bristles. L. 5-7 mm. 1. T. flavipes Fabr.
- Only the two last abdominal joints, rarely the last alone,
with distinct marginal bristles..... 3.
3. The surface of elytra between the punctures (suitably magnified)
distinctly transversal or reticulate-aciculated 4.
- Elytra rather densely punctate, surface not aciculated ... 11.
4. Pronotum distinctly, with more or less fine and dense punct-
ation. 5.
- Pronotum with scarcely visible, or no punctation, but surface
distinctly transversal aciculate. L. 4-5 mm.....
.....10. T. fimetarius Gravh.
5. Middle of pronotum black, sides broadly, fore- and hind-margin
narrower, bounded reddish or brownish yellow 6.
- Pronotum entirely black (rarely red; subterraneus v. ruficollis)
or at sides and margins translucent or obliterated brown-
ish (cf. subterraneus v. bicolor)..... 9.
6. Elytra more than $1\frac{1}{2}$ times as long as pronotum 7.
- Elytra at most $1\frac{1}{2}$ times as long as pronotum8.
7. The four-five next-last antennal joints broader than long.
The middle-patch on sixth free dorsal joint of abdomen of
♀ set off broad-tipped (Fig. 103). L. 6-8 mm.
..... 2. T. proximus Kr.

- The four-five next-last antennal joints longer than broad.
The middle-patch on sixth free dorsal joint of abdomen of ♀ with a short, set off, obtuse tip, which often is two-toothed. (Fig. 104). L. 7-8 mm. 3. T. humeralis Gravh.
- 8. The next-last antennal joint noticeably longer than broad.
L. 5-7 mm. 4. T. marginatus Gyllh.
- The next-last antennal joints not longer than broad. L. 5-6
mm. 5. T. pallipes Gravh.
- 9. The middle-patch on sixth free dorsal joint of abdomen of ♀ undivided, and set off broad-tipped. Pronotum as a rule entirely black. L. 5-7 mm. 7. T. rufipes De Geer.
- The middle-patch on sixth free dorsal joint of abdomen of ♀ deeply divided into two tips. Sides of pronotum narrow or broader, obliterated, translucent brownish-red 10.
- 10. Elytra $1\frac{1}{2}$ times as long as pronotum, pitch-black with a reddish spot on humeri. L. 5-6 mm. 6. T. bipustulatus F.
- Elytra twice as long as pronotum, with a large, reddish-yellow longitudinal spot from humerus downward. L. 5-6 mm.
..... 8. T. subterraneus Linn.
- 11. Head and pronotum with extremely fine and very scattered punctation. Pronotum black; elytra lively brownish-red. L. 7 mm. 9. T. rufipennis Gyllh.
- Head and pronotum with distinct and dense punctation 12.
- 12. Pronotum reddish-brown or yellowish-red, with very distinct punctation. L. 3-4 mm. 13. T. collaris Gravh.

- Pronotum pitch-black with brownish-yellow margins, more finely punctated..... 13.
- 13. Pronotum large, broader than elytra. L. 4-4.5 mm.....
..... 11. T. laticollis Gravh.
- Pronotum not broader than elytra. L. 4-4.5 mm.. 12. T. marginellus F.

1. Subgenus Tachinus s. str.

1. T. flavipes Fabr.

(Fabr. Syst. Ent. 268; Erichs. Käf. Mk. Er. 1, 398; Gen. Spec. Staph. 255; Kraatz Ins. D. II, 403; Thoms. Skand. Col. III, 168; Rey Brévip. 1883, 127; Ganglb. Käf. M. II, 340).

Identifiable by the color of antennae and elytra, but particularly by the many outstanding marginal bristles of abdomen, and the sex-characters of ♀. -- (Page 306) --

Black, shiny; elytra reddish-brown with a more or less developed black reflection; sides and hind-margin of pronotum oftenest narrowly, occasionally broader obliterated brownish-yellow or reddish-brown; antennae pitch-black, but the three-four first joints at base, as well as mouth-parts and legs brownish-red.

Head and pronotum are very fine and densely punctated, the surface particularly finely aciculated; antennae slender, their next-last joint feebly oblique; pronotum rather low convex, at base about as broad as elytra, these about $1\frac{1}{2}$ times as long as pronotum, and a little more distinctly punctate than same, the surface very finely reticulate-aciculated; abdomen tapering, very fine and densely punctate, each of its three first free dorsal joints with two short,

linear, obliquely placed hair-spots on middle, and as well as each of the following joints with a long outstanding bristle in side-margins. L. 5-7 mm.

The abdominal sixth free joint (fifth entirely uncovered) of ♂¹ (Fig. 102) in middle short elongated, and tip angularly incised.

Fig. 102. Abdominal tip of Tachinus flavipes F. ♂¹ and ♀.

Of ♀ the same joint is deeply divided into three larger lobes, of which the medial is triangularly shaped and tapering, and of same length as the narrow, tapering sidelobes, which each bears a long bristle in the tip.

Distributed in Europe, and everywhere in Denmark rather common at dung and decaying plants, also in alluvium. At fresh horse-manure on fields and roads it can at times be encountered in numbers.

2. T. proximus Kr.

(Kraatz Stett. Ent. Ztg. XVI, 1855, 25; Ins. D. II, 401; Rey Brévip. 1883, 136; Thoms. Skand. Insekt. I, 1885, 58; Ganhlb. Käf. M. II, 341).

One of our largest species, identified particularly by color of pronotum, long elytra, and sex-characters of ♀.

Black, shiny; sides of pronotum broadly, its fore- and hind-margin narrowly, bounded brownish-yellow; elytra reddish-brown with a more or less distinct black reflection; antennae brown or reddish-brown, tip of the second and third joint oftenest black, basal-joint, mouth-parts, and legs brownish-red or reddish-yellow.

Head and pronotum with very fine and dense punctation, the sur-

face finely aciculated; antennae rather slender, considerably more robust than those of flavipes, their four-five next-last joints fully as broad as long; pronotum behind middle as broad as elytra, about twice as broad as long, anteriorly feebly narrowing; elytra amply $1\frac{1}{2}$ times as long as pronotum, and somewhat more distinctly punctate than this, - - (Page 307) - - the surface finely transverse-aciculate; abdomen strongly tapering, with fine and very dense punctation, each of its three first visible dorsal joints with two small, obliquely placed hair-spots on middle, the fifth free joint with a long bristle in side-margins. L. 6-8 mm.

The abdominal sixth free dorsal joint of ♂ is somewhat elongated in middle, and in tip feebly emarginate, trimmed- or rounded-off. Of ♀ the same joint is deeply triple-divided, the medial lobe dorsally rather broad, then abruptly set off as styliiform, as long as the two styliiform sidelobes, which each bears a long bristle in tip (Fig. 103).

At fungus, carrion, and manure, distributed in North- and Middle-Europe, but rather rare in Denmark, particularly in the northern part of Jutland.

3. T. humeralis Gravh.

(Gravh. Micr. 136; Erichs. Gen. Spec. Staph. 156; Kraatz Ins. D. II, 400; Thoms. Skand. Col. III, 155; Rey Erévip. 1883, 133; Ganglb. Käf. M. II, 341).

From proximus, to which it is closely allied and resembles in color, it differs (cf. Kraatz and Ganglb.) particularly by the following characteristics:

It is oftenest somewhat larger; antennae more slender, their four next-last joints - in a certain direction - longer than broad, the four first joints clear brownish-red; elytra somewhat longer, and together with pronotum more robustly punctated. For the rest, the species-difference is particularly manifested in the sex-characters. L. 7-8 mm.

The abdominal sixth free dorsal joint of ♂ is like that of proximus short elongated, but the elongated part is always emarginate, and thereby obtuse two-toothed. Of ♀ the middle-lobe of the same joint is broad with an abruptly set off, short tip, which sometimes is short two-toothed; the side-lobes are styliform and oftenest as long as the middle-lobe. (Fig. 104).

Fig. 104. Abdominal tip of Tachinus humeralis Gravh.
♀. (aft. Muls. et Rey).

It is said to be distributed in the greater part of Europe (Ganglb.); in Sweden it is found in Skåne and Norrland; in Denmark it has heretofore not been identified, perhaps in the collections it has been mixed with proximus.

4. T. marginatus Gyllh.

(Gyllh. Ins. Suec. II, 255; Kraatz Ins. L. II, 406; Thoms. Skand. Col. III, 156; Ganglb. Käf. M. II, 342).

It has (according to Kraatz) a similarity to the light species of T. subterraneus, from which it however differs inter alia, by much finer antennae. - - (Page 308) - -

Black, shiny; sides of pronotum broadly, its fore- and hind-

margin narrowly set off yellowish-brown; elytra likewise yellowish-brown, but along the suture and at the outer hind corners brownish-black; antennal base, mouth-parts, and legs reddish-yellow.

Head and pronotum with particularly fine, open punctation, and the background surface especially finely transversely aciculated; antennae long and slender, their next-last joints longer than broad; elytra $1/3$ longer than pronotum, and shorter than those of subterraneus, very fine and not densely punctated; abdomen very fine and rather densely punctated, each of its two hindmost joints on sides with an outstanding bristle. L. 5-7 mm.

The middle-lobe of the abdominal sixth free dorsal joint of ♂ is in the tip deeply divided into two teeth; of ♀ the same joint is cleft in four equally long tips.

Since it is distributed in North-Europe and found in North-Germany and Middle-Sweden, it is not improbable, that it may be found in Denmark, though it has not heretofore been observed here.

5. T. pallipes Gravh.

(Gravh. Micr. 20; Erichs. Gen. Spec. Staph. 261; Kraatz Ins. D. II, 407; Thoms. Skand. Col. III, 157; Rey Brévip. 1883, 138; Janglb. Käf. M. II, 341).

By the color of pronotum near allied to proximus, but a little smaller, and elytra shorter and darker, and differently formed sex-characters.

Black, shiny; sides of pronotum rather broadly, bounded, its fore- and hind-margin narrowly brownish-yellow; elytra pitch-black, a small

spot on humerus, and their hind-margin yellowish-brown; antennal base, mouth-parts, and legs brownish-yellow.

Head and pronotum with very fine and rather dense punctation, the surface very finely transversely aciculated; antennae rather slender, their next-last joints about as broad as long; elytra about $1\frac{1}{2}$ times as long as pronotum, more robust and densely punctated than this, the surface very finely shagreened; abdomen fine and densely punctated, with hair-spots and side-margin-bristles like those of proximus.
L. 5-6 mm.

Of ♂ (Fig. 105) the middle-lobe of the abdominal sixth free dorsal joint is considerably elongated, and the tip, by an angulus incision divided into two points or teeth; side-lobes are short, obtuse. Of ♀ the middle-lobe of the same joint is by a deep incision divided into two long, pointed teeth, which extend a little longer forward than the styliformes, pointed side-lobes; the middle and rather broad incision of the sixth ventral joint has in the curve a little sharp tooth. (Kraatz, Ganglb.).

Fig. 105. Abdominal tip of Tachinus pallipes Gravh.
♂ and ♀ (aft. Muls. et Rey).

It has not heretofore been found in Denmark, but as it appears in Skaane (Thoms.) and is not rare in Middle-Europe (Ganglb.), it is possible that it may also be found here.

6. T. bipustulatus Fabr.

(Fabr. Ent. Syst. I, 2, 533; Erichs. Den. Spec. Staph. 260;

Kraatz Ins. D. II, 409; Thoms. Skand. Col. III, 157; Key Prévip. 1883, 142; Ganglb. Käf. M. II, 342).

Easily identified by the light antennae, and the conspicuous spot on humerus.

Pitch-black, shiny; side-margins of pronotum, occasionally also its fore- and hind-margin, as well as the posterior margins of the abdominal joints translucent reddish; elytra brownish-black with a large yellowish-red or brownish-red, posteriorly not sharply bounded spot on humerus; antennae rust-colored, their base, mouth-parts, and legs reddish-yellow.

Head and pronotum with very fine, but not dense punctation, the background surface very finely transversely aciculate; antennae rather short and robust, their medial and next-last joints broader than long; pronotum at middle amply as broad as elytra; these about $1\frac{1}{2}$ times as long as pronotum and more distinctly punctate than this, the surface very finely reticulate-aciculated; abdomen tapering, very dense, finely punctate, with two feeble hair-spots on middle of the two first free dorsal joints, and an outstanding bristle on side-margin of each of the next-last. L. 5-6 mm.

Of ♂ the middle-lobe on the abdominal sixth free dorsal joint is somewhat longer than the bristle-bearing side-lobes, and by a small incision divided into two obtuse teeth. Of ♀ the middle-lobe of the same joint is by a deep, at bottom rounded incision divided into two small points, which reach as far forward as the almost pencil-shaped, bristle-bearing side-lobes (Fig. 106).

Fig. 106. Abdominal tip of Tachinus bipustulatus Fabr.
♂ and ♀.

Distributed in Middle-Europe and in southern Sweden; very recently discovered in Denmark and found in numbers at Horsens, Vejle, and Varde in Cossus-burrow and gnaw-crumbles on infected poplar and oak. It favours outflowing treesap.

7. T. rufipes De Greer.

(De Greer Ins. IV, 24; Erichs. Käf. Mk. Br. I, 397; Gen. Spec. Staph. 254; Kraatz Ins. D. II, 402; Thoms. Skand. Col. III, 156; Rey Brévip. 1883, 145; Ganglb. Käf. M. II, 343).

Easily identified by the color, and a proportionally broad pronotum. (Fig. 101).

Black, shiny; the humeral corners of elytra and distal back-margin occasionally brownish-red; antennal base, mouth-parts, and legs reddish-yellow or clear brownish-red.

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Head and pronotum with particularly fine, open punctation, and the surface very finely transversely-aciculate; antennae slender, their next-last joints longer than broad; pronotum proportionally large, and especially that of ♂ very distinctly broader than elytra, with strongly rounded sides, rather convex; elytra $1\frac{1}{2}$ times as long as pronotum, these as well as abdomen more dense and distinctly punctate than pronotum; abdomen tapering, its three first free dorsal joints with two small hair-spots on middle, and the fifth with an outstanding bristle on sides. L. 5-7 mm.

Fig. 107. Abdominal tip of Tachinus rufipes De Greer. ♂ and ♀.

In the ♂ the middle-lobe of the sixth free dorsal joint of the abdomen is distinctly longer than the side-lobes, and the tip divided into two teeth by a rounded incision. In the ♀ the middle-lobe of the same joint is broad, and briefly acute, scarcely as long as the almost styliform, bristle-bearing side-lobes (Fig. 107).

Distributed everywhere in Europe, and common in Denmark, under leaves, decaying plantstuff, dung and carrion. Also in North America.

8. T. subterraneus Linn.

(Linné Syst. Nat. I, II, 684; Erichs. Gen. Spec. Staph. 259; Kraatz Ins. D. II, 409; Thoms. Skand. Col. III, 154; Rey Brévip. 1883, 149; Ganglb. Käf. M. II; 343).

Easily identified by the remarkable large color-spot and length of elytra, though the color varies.

Black or pitch-black, shining; sides and back-margin of pronotum often translucent brownish; a more or less extensive longitudinal spot on elytra from the humerus to - or beyond the middle reddish yellow; antennal base and legs brownish-red. - In a variety (v. bicolor Gravh.) the sides of pronotum are broadly yellowish-red, and the spot on elytra so extensive, that only the suture and back-margin are pitch-black; in an other (v. ruficollis Lpp.) the entire pronotum and elytra red, with the exception of an abbreviated sutural stripe.

Head and pronotum are finely and rather densely punctate, back-ground surface finely reticulate-aciculated; antennae quite robust, their next-last joints as broad as long; pronotum low convex, posteriorly as broad as elytra; these likewise low convex, twice as long

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as pronotum, more distinct and densely punctated than this, finely reticulate-aciculated; abdomen strongly tapering, its two first free dorsal joints with two feeble hair-spots on middle, the fifth long, slightly undate at the tip, and on sides with one or two outstanding marginal bristles. L. 5-6 mm.

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In the ♂ the sixth free dorsal joint of the abdomen is convex along the middle; tip of the middle-lobe with a narrow incision, side-lobes abbreviated, obtuse. In the ♀ the middle-lobe of the same joint is divided into two narrow points by a deep incision, considerably shorter than the robustly developed, very long side-lobes, which on the dorsal exterior side has a short, styliiform tip.

In rotten fungus, underneath old hay, and at manure; distributed in Europe; very rare in Denmark and so far found only in a few places on the peninsula: Lindum Forest south of Hobro (author), Lindaa south of Flensborg and Blans, Sundevad (I. Andersen and J. Andersen); (v. bicolor is found at Lindaa together with the typical form).

9. T. rufipennis Gyllh.

(Gyllh. Ins. Suec. II, 258; Kraatz Ins. D. II, 405; Thoms. Skand. Col. III, 155; Rey Brévip. 1883, 130; Sanglb. Käf. M. II, 346).

A beautiful species, easily identified by the conspicuous color of elytra.

Shining black; elytra blood-red, around scutellum and at the posterior margin occasionally brownish; antennae pitch-black, their four first joints clear reddish-brown; legs brown with reddish tarsi.

Head and pronotum with particularly fine and scattered punctation, and like the proportionately robust, but not dense punctation of elytra, not aciculated in surface, therefore strongly lucid; antennae rather slender, their next-last joint, particularly in the ♂, as long as broad; pronotum posteriorly as broad as elytra, with obtuse-angular hind-corners; elytra 1½ times as long as pronotum; abdomen strongly tapering, its three first free dorsal joints with two small hair-spots on middle, and the fifth with a long bristle on the sides. L. 7 mm.

In the ♂ the middle-lobe of the abdominal sixth free dorsal joint is divided into two short teeth, by an angular incision, the side-lobes obtuse. In the ♀ the middle-lobe of same joint is deeply cleft into two slender points, considerably shorter than the styliform; bristle-bearing side-margins.

Under leaves on half-damp woodland ground, at fungus and decaying plants. Very rare everywhere in North- and Middle-Europe, and in Denmark heretofore only single specimens found in a few places: Lyrehaven north of Copenhagen, Fakse, Soro, Vang forest in Vendsyssel.

10. T. fimetarius Gravh.

(Gravh. Micr. 141; Erichs. Käf. M. Br. I, 398; Gen. spec. stapn. 264; Kraatz Ins. D. II, 411; Thoms. Skand. Col. III, 155; Key Brévip. 1883, 153; Sanglb. Käf. M. II, 344).

Low convex; in appearance and color most like T. flavipes, but smaller, with pronotum indistinctly or not punctated, and thereby easily identified.

Black, shining; side-margins of pronotum, occasionally also back-margins, narrowly yellow-brownish; elytra brown, darkish-brown, or yellow-brownish with lighter humeri and back-margins; antennae, and mouth-parts pitch-black; legs reddish or brownish yellow.

In contrast to our other species the head and pronotum of finetarius is without punctation, or with such extremely fine and scattered punctation, that the punctures can only be seen when greatly magnified; the surface with very fine, undulating transversal aciculation; antennae slender, their next-last joints as long as broad; pronotum posteriorly as broad as elytra, these $1\frac{1}{2}$ times as long as pronotum, not densely, but distinctly punctated, surface finely reticulate aciculated; abdomen tapering, with fine, open punctation, its two-three first free dorsal joints with two small hair-spots on middle, and the fifth with an outstanding marginal bristle on sides. L. 4-5 mm.

In the ♂ the middle-lobe of the abdominal sixth free dorsal joint is divided into two, rather short, triangular tips, and a little longer than the bristle-bearing side-lobes. In the ♀ the middle-lobe of same joint is by a deep, narrow incision divided into two slender tips of same length and form as the bristle-bearing side-lobes.

Distributed in Europe, and common everywhere in Denmark; in the spring often numerous in the flowers of hawthorn, otherwise on half-damp ground beneath leaves, in hollow trees and at outflowing tree-sap, occasionally also at anthills. It is (fc. Fowler) not found in England.

11. I. laticollis Gravh.

(Gravh. Micr. 141; Kraatz Ins. D. II, 413; Thoms. Skand. Col. IX, 302; Rey Brévip. 1883. 157; Ganglb. Käf. N. II, 344).

This and the two following are the smaller species of the genus; they as well as rufipennis differ from all the preceding species in that the background surface of elytra is not aciculated; for the rest laticollis is particularly identifiable by pronotum being proportionally broad and convex.

Black or pitch-black, shining; side-margins and back-margin of pronotum narrowly translucent brownish-yellow; elytra brownish-black or brown, a longitudinal stripe from humerus along the sides, as well as back-margins reddish-brown or brownish-yellow; antennal base and legs reddish-yellow.

Head and pronotum is very fine and rather densely aciculate-punctated; antennae slender, their next-last joints as long as broad; pronotum rather convex and distinctly broader than elytra, which are $1\frac{1}{3}$ times as long as pronotum, very dense and distinctly punctated; abdomen tapering, very fine and densely punctated, its two-three first free dorsal joints with two feeble hair-spots on middle, and the fifth with an outstanding marginal bristle on sides. L. 4-4.5 mm.

In the ♂ the middle-lobe of the abdominal sixth free dorsal joint is longer than the bristle-bearing, acute side-lobes, and by a rounded incision in tip divided into two acute points, each with two-three fine bristles in tip. In the ♀ the middle lobe of same joint is divided by a deeper, rounded incision into two sharp tips of same length.

as the rather broad, at the tip bristle-bearing sidelobes, which dorsally have two narrow outer lobes.

Distributed in Europe on damp or half-damp ground, under leaves, fagot, and manure, rotting plants and the like, and rather common everywhere in Denmark.

12. T. marginellus Fabr.

(Fabr. Spec. Ins. I. 337; Erich. Käf. Mk. Br. I, 349; Gen. Spec. Staph. 263; Kraetz Ins. D. II, 412; Thoms. Skand. Col. III, 157; Rey Brévip. 1883, 160; Ganglb. Käf. M. II, 345).

Very closely allied to laticollis, of same length and similar color, but less broad, with pronotum narrower, lower convex, and elytra somewhat longer.

Black or pitch-black, shining; sidemargins and back-margin of pronotum rather sharply bounded and narrowly brownish-yellow; elytra pitch-black or blackish-brownish; a longitudinal stripe along the sides and back-margins reddish or brownish yellow; antennal base and legs reddish-yellow.

Punctuation and other sculpture of the body, as well as antennal structure like that of laticollis; pronotum is not broader than elytra, and these are about $1\frac{1}{2}$ times as long as pronotum. L. 4-4.5 mm.

In the ♂ the abdominal middle-lobe of the sixth free dorsal joint is longer than the short, tooth-formed, bristle-bearing sidelobes, and the tip divided into two acute points, by a small angular incision. In the ♀ the middle-lobe of the same joint is a little shorter than the sidelobes, and is cleft into two points, each with a fine

bristle. The side-lobes are as usual bristle-bearing and have dorsally a narrow outer lobe.

Distributed everywhere in Middle- and North Europe, and is common on damp or half-damp ground under leaves, fagot, manure, in plant-dung and the like.

13. T. collaris Gravh.

(Gravh. Micr. 143; Erich. Käf. Mk. Br. I, 400; Gen. Spec. Stapf. 264; Kraatz Ins. L. II, 414; Thoms. Skand. Col. III, 159; Hey Brévip. 1883, 165; Ganglb. Käf. L. II, 246).

Our smallest species, closely allied to the two preceding species, more distinctly punctated than these, and also distinguishable by the convex, broad form of pronotum, and its as a rule light color.

Black or pitch-black, shining; pronotum yellowish-red or brownish-red, often darker at middle; elytra reddish-brown or pitch-brown, their back-margin and back-margins of the abdominal joints narrowly translucent reddish; antennal base, mouth-parts, and legs reddish-yellow.

Head is shiny, with very fine and not dense punctation; antennae long, their next-last joints as broad as long; pronotum broader than elytra, convex, distinct and rather densely punctated, surface smooth; elytra $1\frac{1}{2}$ times as long as pronotum, with dense and robust punctation, the surface not aciculated; abdomen tapering, finer and a little denser punctated than elytra, its two first free dorsal joints with two feeble, small hair-spots on middle, the sixth with an outstanding marginal bristle on sides. L. 3-4 mm.

In the ♂ the middle lobe of the abdominal sixth free dorsal joint longer than the short, tooth-formed, bristle-bearing sidelobes, and the tip divided into two short, acute points, by a small angular incision. In the ♀ the middle lobe of the same joint is as long as the pointed, narrowly triangle-shaped, bristle-bearing sidelobes, the tip is divided into two narrow triangular-shaped points, by a deep acute-angular incision.

Distributed in North and Middle Europe; here it is not rare in plant-fertilizer, and under rotten plants, also on damp ground under leaves and in alluvium.

2. Subgenus Drymoporus Thoms.

14. 1. elongatus Gyllh.

(Gyllh. Ins. Suec. II, 251; Erichs. Gen. Spec. Staph. 265; Kraatz Ins. D. II, 416; Thoms. Skand. Col. III, 159; Rey Brévip. 1883, 171; Ganglb. Kär. M. II, 347).

The largest species of the genus, elongated and uniformly, and by the form alone easily distinguished from all the preceding species.

Black, feebly glistening; posterior margins of elytra and abdominal joints narrowly translucent reddish; elytra and legs pitch-black or pitch-brown.

Head and pronotum with particularly fine, scattered dot-punctuation, the surface with particularly fine transversal aciculation; antennae proportionally short and robust, their next-last joints amply as broad as long; pronotum posteriorly at least as broad as elytra,

a little broader than long, rather strongly narrowing forwardly, slightly convex; elytra almost 1½ times as long as pronotum, with feeble traces of longitudinal grooves, with rather robust and dense linear-punctation, rugget at middle; abdomen elongate, uniform breadth, only the distal joint briefly tapering, fine and particularly at sides densely punctated, the three first free dorsal joints with two small hair-spots on middle, the fifth with a long marginal bristle on sides. L. 8-10 mm.

In the ♂ the fore-tibiae toward tip, and the fore-tarsi rather strongly dilated. The middle-lobe of abdominal sixth free dorsal joint is a little longer than the short, bristle-bearing sidelobes, the tip by an angular incision divided into two short, obtuse points. In the ♀ the middle-lobe of the same joint is a little longer than the rather broad, with two long bristles in tip provided sidelobes, and is by a very deep incision divided into two long, narrow points.

Distributed in North- and Middle Europe, but everywhere here rare or very rare; on half-moist ground under leaves, rocks and the like, also in alluvium (Frederikshavn, Harboøre, Aalborg, Randers, Kolding, Haderslev; Antvorskov, Charlottenlund, and other places).

53. Genus Tachyporus Gravh.

(Gravh. Micropt. 1806, 1; Erichs. Gen. Spec. Staph. 231; Kraatz Ins. D. II, 417; Thoms. Skand. Col. III, 149; Rey Brévip. 1883, 75; Ganglb. Käf. M. II, 348).

Tachyporus differ from Tachinus mainly in that, the third joint of the maxillary palpi is as long as the second, and that the distal

joint is very short and thin, subuliform. . For the rest note the following:

The body is more or less fusiform, anteriorly obtusely rounded and rather convex, posteriorly tapering, oftenest predominantly light colored; pronotum and elytra have several, abdomen many outstanding marginal bristles, otherwise the head and pronotum are naked, shiny, elytra and abdomen are very sparsely covered with particularly fine, prostrate hair, or the former almost naked; the head is short and broad, deeply imbedded in the pronotum, eyes only slightly protruding, antennae slender, lightly thickened outwardly. Pronotum is large, broader than, or as broad as elytra, anteriorly roundedly narrowing, convex, its posterior margin fitting closely to the base of elytra, which oftenest are somewhat longer than pronotum. Abdomen is tapering, with sharp side-ridges; legs rather slender, medial tibiae finely spiniferous, all tarsi 5-jointed, their fourth joint peculiarly small, the three first fore-tarsal joints of the ♂ is more or less strongly, in the ♀ occasionally feebly dilated, the first joint of the hind-tarsi is stretched as long as the two following joints together.

The sixth abdominal free dorsal joint of the ♂ and ♀ differs in form, but in the same manner in all species; the sex-characters are therefore not species-defining. In the ♂ the said . dorsal joint is undivided, with rounded tip, in the ♀ divided by sharp incisions into two bristle-bearing sidelobes, and a middle-lobe, which again is divided into two narrow tips, almost, as long as the sidelobes.

In the ♂ the posterior margin of the next-last ventral joint has an angular incision.

Tachypori are active, smaller staphyrid, which live on various sorts of ground under the turf, and ofte are numerous in alluvium.

In North and Middle-Europe 13 species are known, and of these 11 are found here in Denmark.

Key to Species.

1. Head reddish-yellow 2.
- Head black or blackish-brownish 3.
2. Elytra distinctly longer than pronotum, black at base. 1.
3.5-4 mm. 1. T. obtusus Linn.
- Elytra not or a very little longer than pronotum, entirely
reddish-yellow. 1. 3-3.5 mm 2. T. abdominalis Fabr.
3. Pronotum reddish-yellow or yellowish-red, or brownish-yellow
with darker middle 4.
- Pronotum black, its sides anteriorly narrowly, posteriorly
broader reddish-yellow 8.
- Pronotum posteriorly yellowish-red, its anterior half part
black or blackish-brownish. 1. 2.5-3 mm... 7. T. transversalis Gravh.

4. Elytra almost naked or scarcely visibly haired, clear reddish-
yellow, or yellow-reddish, at scutellum and on base narrowly
black, with or without black longitudinal stripe on sides..5.
- Elytra very finely, though rather distinctly haired, differently
colored 6.

5. Elytra without longitudinal stripe on sides, only on base and at scutellum narrowly black. L. 3.5-4 mm... 3. T. solutus Er.
- Elytra with a narrow, black longitudinal stripe on sides, otherwise same as solutus. L. 3-3.5 mm.... 4. T. chrysomelinus Linn.
6. Body rather narrow and flat. Pronotum brownish-yellow, middle dark-brownish. L. 2.5-3 mm..... 11. T. nitidulus Fabr.
- Body rather broad and convex. Pronotum yellowish-red, middle occasionally brownish 7.
7. Elytra distinctly longer than pronotum. L. 2.5-3 mm.....
..... 5. T. striceps Steph.
- Elytra not longer than pronotum. L. 3-3.5 mm... 6. T. ruficollis Gravh.
8. Elytra red, a small spot around scutellum and a longitudinal spot along the sides black. L. 3.5-4 mm... 8. T. hypnorum Fabr.
- Elytra black or brownish 9.
9. Pronotum not broader than elytra. L. 2-3 mm... 9. T. pusillus Gravh.
- Pronotum distinctly broader than elytra. L. 2-3 mm
..... 10. T. macropterus Steph.
1. T. obtusus Linn.

(Linné Syst. Nat. 1, 2, 684; Erichs. Käf. KK. Br. I, 392; Gen. Spec. Staph. 232; Kraatz Ins. L. II, 419; Thoms. Skand. Col. III, 149; Rey Erevip. 1883, 79; Ganglb. Käf. W. II, 349).

One of the larger species, easily recognized by the color alone.

Reddish-yellow; abdomen yellowish-red; the anterior part of elytra of greater or smaller dimension, and the distal abdominal joints, also meso- and metasternum black.

In general the anterior half part of elytra is black, but a va-

riety occurs, where the black color is limited to a small spot around scutellum, and a stripe at the humeri. - Elytra are $1/3$ longer than pronotum. L. 3.5-4 mm.

Very common everywhere in Europe on forest-, meadow- and field-ground. The color-variety is rare (Lyngby Moor in alluvium, auth.).

2. T. abdominalis Fabr.

(Fabr. Spec. Ins. II, App. 501; Erichs. Käf. Mk. Er. I, 393; Gen. Spec. Staph. 233; Kraatz Ins. D. II, 420; Ganglb. Käf. M. II, 350. - ruficeps Kraatz Ins. D. II, 422; Rey Brévip. 1883, 84).

Identifiable by the color, and by the proportionately short elytra.

Reddish-yellow; base of abdominal joints also meso- and metasternum brownish-black; antennae dark toward the tip.

Elytra only a very little or not longer than pronotum. - In the callow animals, which supposedly are immature specimens of closely allied species, the yellow color of the head, and the short, entirely yellow elytra are the surest characters. L. 3-3.5 mm.

Distributed in Middle- and North Europe. In Denmark it is very rare (Dyrehaven at Copenhagen, Orholm Common, at Søborg Lake, Sorø; Kerteminde; Haderslev; Saebygaard's forest in Vendsyssel).

3. T. solutus Er.

(Erichs. Gen. Spec. Staph. 236; Kraatz Ins. D. II, 421; Thoms. Skand. Col. III, 150; Rey Brévip. 1883, 85; Ganglb. Käf. M. II, 350).

Identifiable particularly by color, proportionally robust antennae, and naked elytra.

Yellowish-red; the head, a small spot around scutellum and often

extending along the base of elytra, abdomen, with exception of the anterior joints' translucent yellow back-margins, also meso- and meta-sternum black.

Antennae are distally rather strongly thickened, their three-four next-last joints about as broad as long; elytra $1/3$ longer than pronotum, with posteriorly feebly converging sides, and very short, fine marginal-bristles, especially fine scattered punctation, naked or only by great magnifying visible, extremely fine and sparsely haired; abdominal joints on their ~~xxxx~~ anterior part with distinct, dense punctation, at posterior margins finer and more scattered punctation. L. 3.5-4 mm.

On field- and forest ground, distributed everywhere in Europe, and not rare, but less frequent here than the following species.

4. I. chrysomelinus Linn.

(Linne Faun. Suec. n. 858; Erichs. Käf. Mk. Kr. I, 111; Gen. Spec. Staph. 235; Kraatz Ins. D. II, 421; Thoms. Skand. Col. III, 150; Rey Brévip. 1883, 87; Ganglb. Käf. M. II, 350).

From solutus, to which it is very closely allied, and like in form, size, and color, it is generally easily distinguished in that, the elytra as a rule has a black longitudinal stripe from humerus down along the sides. This stripe is often abbreviated, and can occasionally be entirely missing; chrysomelinus is then distinguished from solutus by the finer, darker antennae, coarser and longer side-bristles on elytra and abdomen, also by the finer punctation. L. 3-3.5 mm.

Distributed everywhere in Europe and very common here in Denmark

on damp or half-damp ground.

5. T. atriceps Steph.

(Steph. III. Brit. V. 181; Ganglb. Käf. M. II, 351. - humerosus Erichs. Gen. Spec. Staph. 238; Kraatz Ins. D. II, 424; Thoms. Skand. Col. IX, 300; Rey Brévip. 1883, 90).

A somewhat changeable species, best identified by the color of pronotum, and the distinct, though very fine hairiness.

Black; pronotum yellowish-red, the middle at times yellow-brownish; elytra brownish-red, around scutellum, at base, and along sides oftenest black, rarely entirely brownish-red; more often the black color is spreading so greatly that the back-margin and suture, or the back-margin alone are brownish-red; back-margin of the abdominal joints are translucent reddish-yellow. antennae brownish, their base, mouth-parts, and legs reddish-yellow.

Pronotum is rather strongly convex, amply as broad as elytra; these distinctly longer than pronotum, very fine and rather densely punctated, in the not out-worn animals distinctly, though very fine and sparingly haired, sides posteriorly feebly converging; abdomen very finely and rather densely punctated. L. 2.5-3 mm.

Distributed in Europe and rather frequent here on damp forest- and meadow-ground.

6. T. ruficollis Gravh.

(Gravh. Micr. 128; Erichs. Gen. Spec. Staph. 239; Kraatz Ins. D. II, 424; Rey Brévip. 1883, 90 (humerosus); Ganglb. Käf. M. II, 351).

Very closely allied to atriceps, but oftenest larger and with

Shining black; pronotum yellowish-red; elytra black with red-brownish back-margin, occasionally more spreading brownish; back-margins of abdominal joints narrowly translucent reddish; antennal base, mouth-parts, and legs reddish yellow.

Pronotum large, strongly convex; elytra not longer than pronotum, posteriorly feebly narrowing, very fine, though rather distinctly haired, with very fine and rather dense punctation likewise the abdomen. L. 3-3.5 mm.

Distributed particularly in Middle European mountain-regions, and not found in Sweden or England. In Denmark very rare on damp ground. (Vejle, Frisenborg Forests, at Jul Lake, Ejsbøl at Haderslev and several other places).

7. *I. transversalis* Gravh.

(Gravh. Mon. 8; Erichs. Käf. Mk. Br. I, 395; Gen. Spec. Staph. 240; Knechtz Ins. L. II, 426; Thoms. Skand. Col. III, 151; Pey Brévip. 1883, 103; Genglb. Käf. L. II, 151).

Easily identified by the color of pronotum and elytra .

Black, occasionally with a feeble bluish reflection; pronotum posteriorly yellowish-red, its anterior half-part black or blackish-brownish; elytra black, their posterior third part yellowish-red; back-margins of abdominal joints broadly, translucent reddish-yellow; antennae reddish-brownish, their base, mouth-parts, and legs reddish-yellow.

Head small; antennae distinctly thickened outwardly; pronotum convex, a little broader than elytra, these about 1/3 longer than pro-

notum, with parallel sides, as well as abdomen particularly fine, not densely punctated, sparsely and very finely haired. L. 2.1-3 mm.

Here and there at the edge of lakes and water places under leaves and in alluvium, distributed in Europe, but altogether, also here, rather rare; oftenest found in North-Sjælland.

T. tersus Er. from Middle-Europe, and England has like transversalis parallel-sided elytra, about 1/3 longer than pronotum, but is otherwise nearest like atriceps. Pronotum is reddish-yellow, the middle often darker; - - (Page 319) - - elytra reddish-yellow, one, often at the suture extended, mutual-spot around scutellum, and a longitudinal stripe along the sides black. L. 2.5 mm. (Ganglb.).

- This species may possibly also be found here in Denmark.

8. T. hypnorum Fabr.

(Fabr. Syst. Ent. 266; Ericks. Käf. M. Er. I, 394; Gen. Spec. Staph. 234; Knechtz Ins. D. II, 423; Thoms. Skand. Col. III, 100; Hey Brévip. 1885, 92; Ganglb. Käf. M. II, 351).

Identifiable by the color of pronotum, and the posteriorly feebly narrowed elytra.

Shining black; anteriorly sides of pronotum narrowly, posteriorly as well as hind-corners broadly reddish or brownish yellow; elytra brownish-red or red, around scutellum and from humerus along sides black; back-margins of abdominal joints very narrowly, translucent reddish; antennae pitch-brownish, their base, mouth-parts, and legs yellow.

Antennae are fine; pronotum rather convex and fully as broad as

elytra; these $1/3$ longer than pronotum, posteriorly feebly narrowing, very fine sparsely haired, and together with abdomen very finely and rather densely punctated. L. 3.5-4 mm.

Common everywhere in Europe on field-, meadow- and forest-ground.

9. T. pusillus Gravh.

(Gravh. Mon. 9; Erichs. Käf. Mk. Br. I, 394; Gen. Spec. Staph. 239; Kraatz Ins. D. II, 437; Thoms. Skand. Col. III, 151; Rey Brévip. 1883, 97; Ganglb. Käf. N. II, 352).

A rather small and low convex species, identifiable particularly by the color of pronotum, and the parallel elytra.

Black; sides of pronotum rather broadly, and its back-margin narrowly brownish-yellow; elytra darker or lighter reddish-brown, along sides, occasionally also at middle brownish-black; back-margins of abdominal joints very narrowly, translucent brownish yellow; antennae pitch-brown, their base, mouth-parts, and legs brownish yellow.

Pronotum not broader than elytra, feebly convex; these $1/3$ longer than pronotum, and with parallel or feebly convex sides, together with abdomen with particularly fine, but not dense punctation, very fine and sparsely haired. L. 2-3 mm.

Distributed in Europe, but far less common than the preceding species, found here and there in Denmark, but rare.

10. T. macropterus Steph.

(Steph. Ill. Brit. V. 186; Ganglb. Käf. N. II, 352. — scitulus Erichs. Käf. Mk. Br. I, 395; Gen. Spec. Staph. 240; Kraatz Ins. D. II, 437; Thoms. Skand. Col. III, 151; Rey Brévip. 1883, 95).

Very closely allied to pusillus, but more convex, with broader pronotum, and shorter elytra.

Black; sides and back-margins of pronotum as well as elytra brownish-yellow; back-margins of the abdominal joints translucent reddish-brown; antennae brownish, their base, mouth-parts, and legs brownish yellow.

Antennae feebly thickened outwardly; pronotum broader than elytra; these only a little longer than pronotum, and not narrowed posteriorly, together with the abdomen finely and not densely punctated and haired, somewhat more distinctly punctated than in pusillus. L. 2-3 mm.

On damp woodland ground, very rare in this country (Viby Krat at Aarhus, Floes Forest at Randers, Lindum Forest south of Hobro); distributed in Europe.

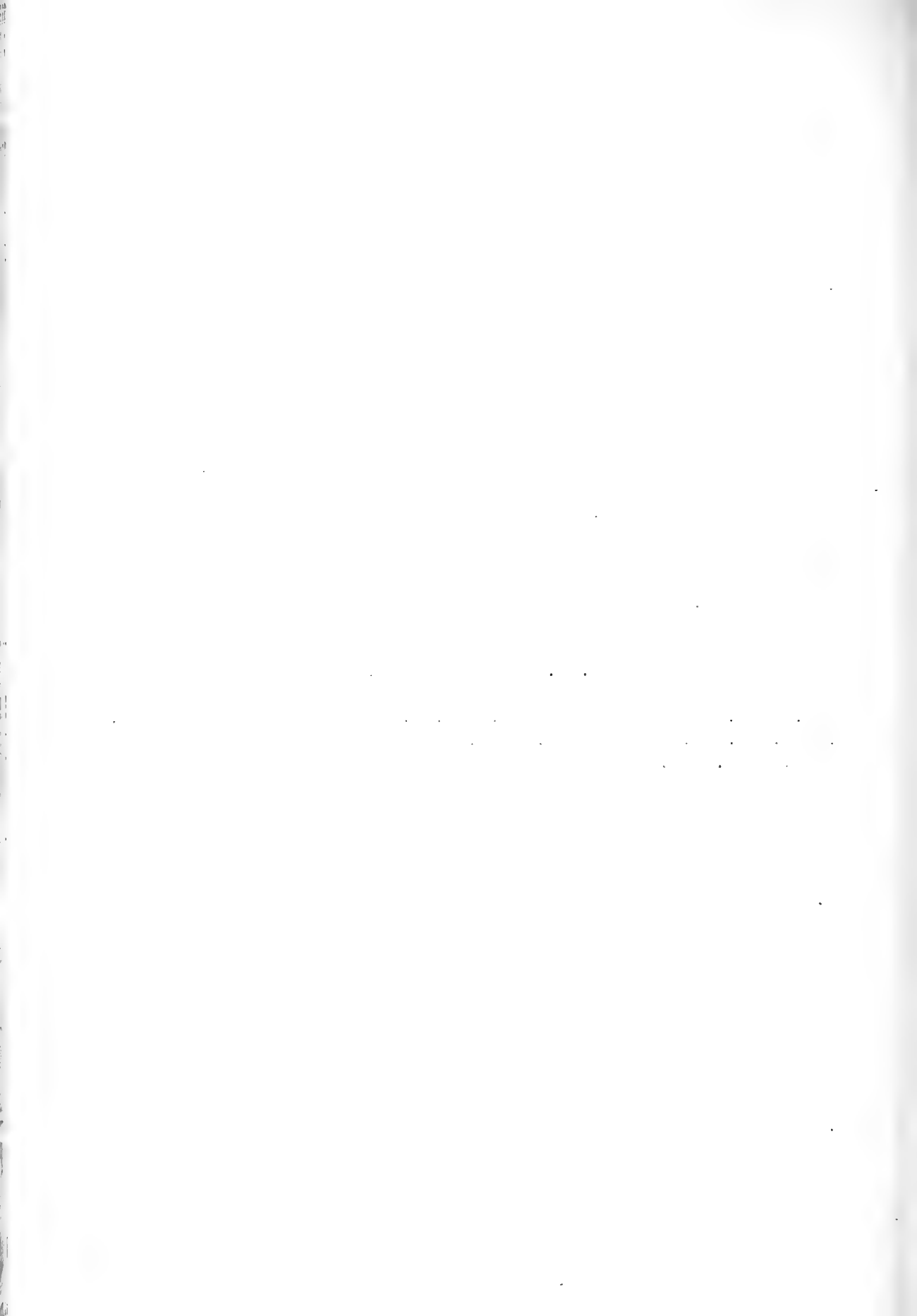
11. T. nitidulus Fabr.

(Fabr. Spec. Ins. I, 337; Ganglb. Käf. M. II, 352. - brunneus Fabr. Erichs. Käf. Mk. Br. I, 395; Gen. Spec. Staph. 241; Kraatz Ins. D. II, 427; Thoms. Skand. Col. III, 152; Rey Brévip. 1883, 100).

In connection with color particularly identifiable by the form of body, which is narrower and lower convex than of any of the preceding species.

Brownish- or reddish-yellow; the head, middle of pronotum, meso- and metasternum, as well as base of abdominal joints oftenest blackish-brownish; occasionally the base and sides of elytra are also dark; antennae are unicolorous, together with mouth-parts, and legs reddish yellow.

Antennae are feebly thickened outwardly; pronotum low convex, a little broader than elytra, which are amply $1/3$ longer than pronotum,



not narrowing posteriorly, and together with abdomen with fine and rather dense punctation, and more distinctly haired than any of the preceding species. L. 2.5-3 mm.

On meadow- and marsh-ground, at the edge of lakes and watering places in alluvium, and under leaves, distributed everywhere in Europe, and not rare in Denmark.

54. Genus Lamprinus Heer.

(Heer Faun. Helv. I, 286; Kraatz Ins. D. II, 428; Thoms. Skand. Col. III, 152; Rey Brévip. 1883, 66; Ganglb. Käf. M. II, 353).

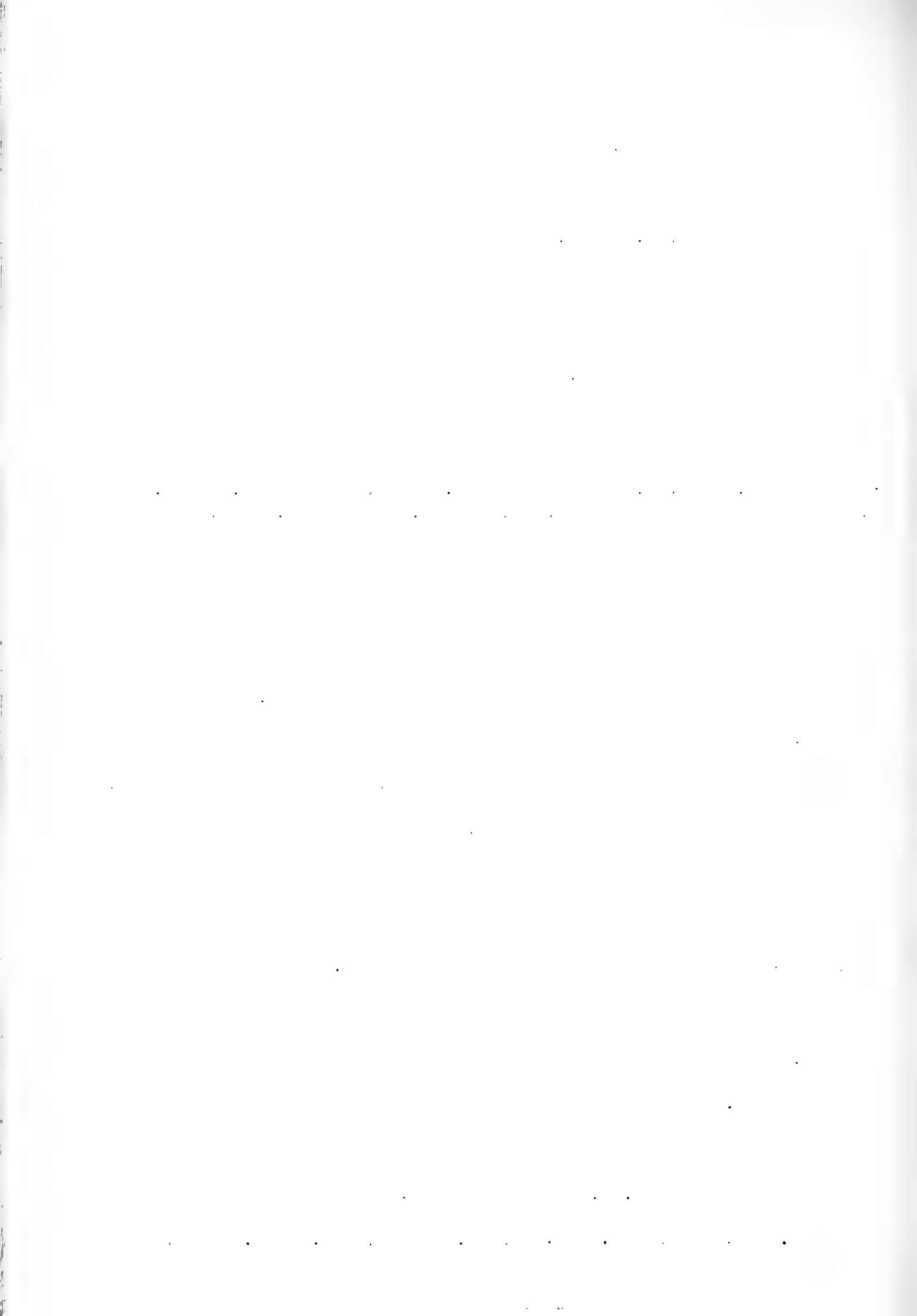
Very closely allied to, and in regard to appearance of body, form, punctation and hair-covering like Tachyporus, from which it however is easily distinguished by the following characters:

Antennae shorter and much more robust, outwardly more strongly thickened, from the side distinctly flatly depressed; the third joint of maxillary palpi twice as long as the second, the fourth joint short, only $\frac{1}{2}$ as long as the third, styliform, obtusely pointed; tarsi shorter and more robust, pressed together from sides, their fourth joint smaller than the third, but not like that of Tachyporus remarkably small; fore-tarsi alike in both sexes, not dilated.

In Middle Europe 3 species occurs, which are said partly to live with ants, of these 1 is distributed in North Europe, and also found here in Denmark.

1. L. saginatus Gravh.

(Gravh. Mon. 6; Erichs. Käf. Mk. Br. I, 393; Gen. Spec. Staph. 234;



Kraatz. Ins. D. II, 429; Thoms. Skand. Col. III, 152; Rey Brévip. 1883, 71; Ganglb. Käf. M. II, 353).

Broad, robustly built, in collar not unlike Tachyporus solutus, but considerably larger and more robust, and otherwise easily identified by the characteristics of the antennae.

Yellowish-red; head, meso- and metasternum, also the abdomen, with exception of back-margins of the joints black; antennae, mouth-parts, and legs reddish-yellow.

Head and pronotum very shiny, naked without punctation; antennae not longer than head and pronotum together, robust, strongly thickened, outward toward the tip distinctly flatly depressed, their next-last joints broader than long; pronotum large, posteriorly fully as broad as elytra, anteriorly rounded narrowing, convex, antennae only a little longer than pronotum, with parallel sides, very finely and rather densely punctated, and very finely and sparsely haired; abdomen tapering, somewhat more distinctly and densely punctated than the elytra, and like these very finely haired, and with many outstanding side-margin bristles. L. 4-5 mm.

In the ♂ the abdominal sixth free dorsal joint undivided, the tip rounded off, in the ♀ it is cleft in four equally long, pointed tips.

Distributed, but everywhere rare or very rare, on damp forest- or marsh-ground under leaves and moss, also at lakes and watering-places in alluvium (Vang Forest, and Agdrup thicket in Vendsyssel, Aalborg at the Fjord, Lindum Forest etc. Hobro; Dalum at Odense; Bollemosen, Raavad Moor, at Hulemose Lake, Mose at Hillerød and several

places in North-Sjaelland). Said to be found with ants, particularly the species Myrmica and Lasius. The larva is found in Skaane with Myrm. rubra (Cand. A. Kemner, Lund).

5. Division Bolitobiina.

Antennae 11-jointed; temples and genae of the head with sharp ridges (margins); elytra with suture-stripe; all tarsi 5-jointed.

To this 4 genera.

Key to Genera:

1. Last joint of maxillary palpi about as long as, or longer than the next-last 2.
- Last joint of maxillary palpi very small, styliform, much shorter and finer than the next-last ... 58. Mycetoporus Mannh.
2. First joints of middle- and hind-tarsi with several fine spines on the ventral side; last joint of maxillary palpi thick, conically tapering; antennae long. Elytra unicolorous... 56. Bryocharis Boisd.
- First joint of middle- and hind-tarsi on ventral side haired, but without distinct spines; last joint of maxillary palpi rather cylindrical or feebly tapering 3.
3. Elytra with yellow or black spots 55. Bolitobius Mannh.
- Elytra unicolorous 57. Bryoporus Kr.

55. Genus Bolitobius Mannh.

(Mannerh. Brach. 64; Erichs. Käf. Mk. Br. I, 403; Gen. Spec.

Staph. 268; Kraatz Ins. D. II, 439; Ganglb. Käf. M. II, 361. - Thoms. Skand. Col. III, 170, 171, 166: Bolitobius, Lordithon, and Megacronus. - Rey Brévip. 1883, 195, 189: Bolitobius and Megacronus).

The body is elongated, more or less spool-shaped (fusiform), low convex; thorax naked, abdomen sparsely haired; head somewhat downward bent, posteriorly not constricted, oftenest as broad as long, occasionally strongly elongated; eyes scarcely protruding, temples and genae sharply margined; antennae of various length and strength; maxillary palpi oftenest rather slender, their last joint about as long as - or longer than the next-last, rather cylindrical or feebly tapering, more rarely are they somewhat thickened, and the distal joint more egg-shaped (subgenus Carphacis); labial palpi, rather small.

Pronotum more often a little narrower than elytra, somewhat broader than long, anteriorly narrowing with strongly deflected anterior corners, low convex, smooth and shiny, but with single bristle-bearing punctures along the margins; elytra considerably longer than the pronotum, feebly convex, with yellow or black spots, their humeri with a slight callus, the sides sharply margined, posterior margin squarely truncated, dorsum with impressed sutural groove, and three punctate stripes, of which one lies in the sutural groove, one along the side, and the third, dorsum stripe, in a feeble groove from the humeral callus along the dorsal surface; the punctures of the dorsum stripe differs in number in the species, and may therefore serve as identification characters. The abdomen is oftenest strongly tapering, least in striatus; legs slender, femora at tip, and tibiae with

fine spines, the latter with two longer uncus at apex, tarsi long and slender, 5-jointed, first joint of middle- and hind-tarsi as long as the three following, gradually shorter joints together, on ventral side finely haired, but without spines.

In the ♂ the abdominal sixth ventral joint is at tip concave or squarely truncated, in the ♀ convex.

The species live - as the genus name indicates - particularly in fungi. Of the in Middle- and North-Europe distributed 9 species, 5 are heretofore found in Denmark, 2 or 3 of the rest may possibly still be encountered, and are included in the following.

Key to Subgenera and Species.

1. Antennae short and remarkably robust, their middle- and next-last joints strongly transverse, the next-last ones more than twice as broad as long. Maxillary palpi thick. Abdomen only feebly tapering: 3. subgenus Carphacis Goz.- Elytra brown- or yellowish-red with a black spot on the outer posterior corners. L. 5-6 mm 8. B. striatus Oliv.
- Antennae more or less long and slender, their next-last joints as long as broad or not strongly transverse. Maxillary palpi rather slender. Abdomen strongly tapering 2.
2. Head remarkably long and narrow with oval, not protruding eyes:
 1. subgenus Eolitobius s. str. 3.
- Head rather short, as broad as long; eyes feebly protruding:
 2. subgenus Lordithon Thoms. 5.

3. The posterior margin of pronotum without marginal ridge.

Elytra with scutellum and its nearest surroundings black,
a large spot on the humerus, and the posterior margins
light yellow. L. 5-6 mm..... 1. B. lunulatus Linn.

- Posterior margin of pronotum with fine marginal ridge. Scutellum
red; elytra black, a broad transversal band over base light
yellow 4.

4. Dorsum-stripe of elytra with 8-12 punctures. The species lar-
ger than lunulatus. L. 8-9 mm 2. B. speciosus Er.

- Dorsum-stripe of elytra with 4-6 punctures. The species often-
est smaller than lunulatus. L. 4-6 mm..3. B. pulchellus Mannh.

5. Posterior margin of pronotum with fine ridge..... 6.

- Posterior margin of pronotum without ridge..... 7.

6. Abdomen black or pitch-black, posterior margins of joints
reddish-brown. Dorsum-stripe of elytra with 10-12 punctures.
L. 4-5.5 mm.....4. B. trimaculatus Payk.

- Abdomen red-brownish. Dorsum-stripe of elytra with 8-10 punc-
tures. L. 4-5.5 mm 5. B. trinotatus Er.

7. Dorsum-stripe of elytra with 10-12 punctures. Next-last joint
of antennae scarcely transverse. L. 3.5-5 mm
..... 6. B. exoletus Er.

- Dorsum-stripe of elytra with 4-6 punctures. Next-last joints
of antennae distinctly transverse. L. 2.5-4.5 mm.....
..... 7. B. pygmaeus Fabr.

1. Subgenus Bolitobius s. str.

1. B. lunulatus Linn.

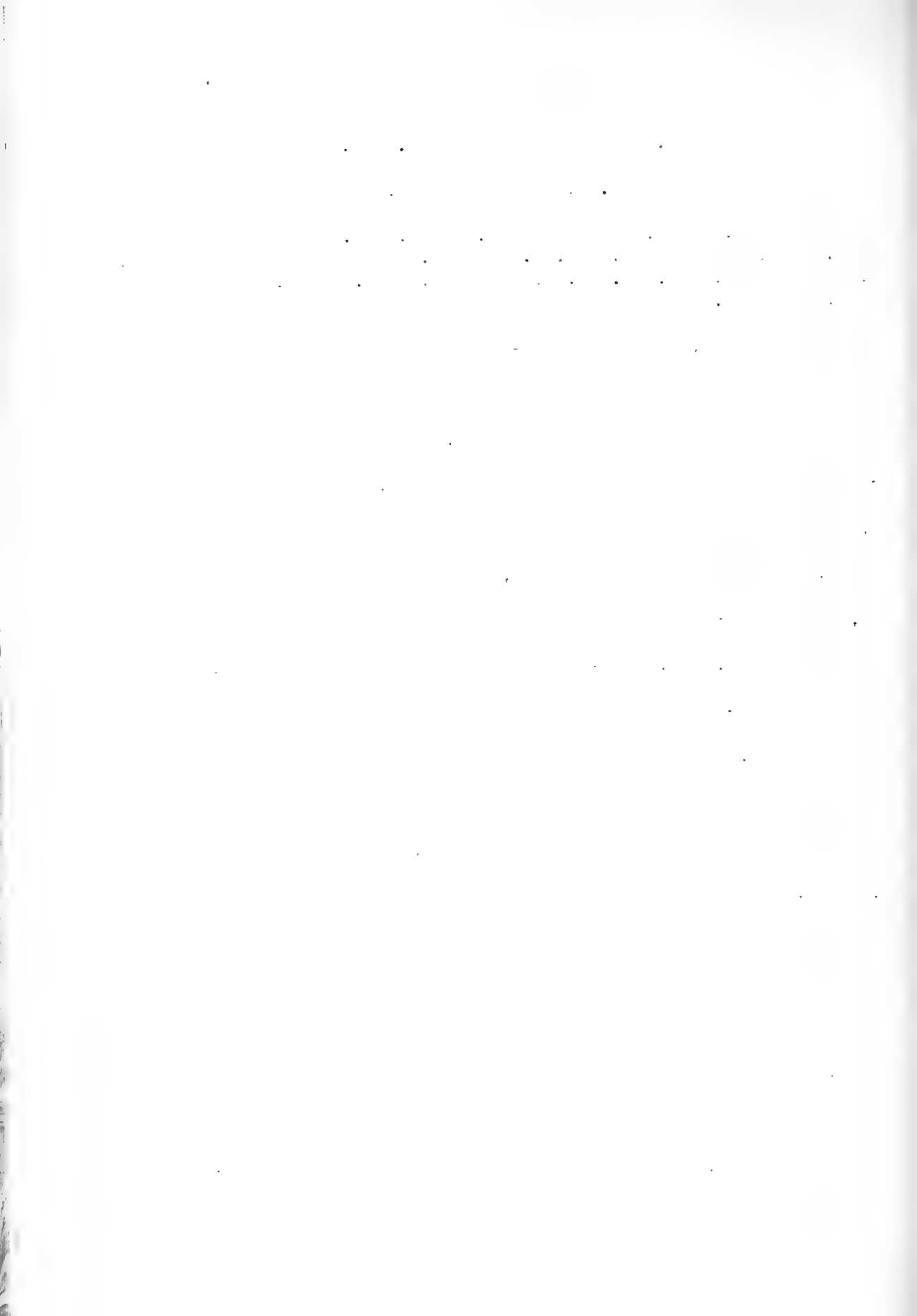
(Linne Syst. Nat I. 2, 684; Thoms. Skand. Col. III, 170; Rey Brévip. 1883, 201; Ganglb. Käf. M. II, 362. - atricapillus Fabr. Syst. Ent. 267; Erichs. Käf. Mk. Br. I, 408; Gen. Spec. Staph. 276; Kraatz Ins. D. II, 447).

A rather large, fusiform, vari-colored, and lustrously shining species, identifiable particularly by the remarkably elongated form of the head, and the color of the elytra.

Yellowish-red, very strongly shining; head, meso- and metasternum, scutellum, and elytra, also the abdominal three last joints black; a large, triangular spot on humerus, and the elytral posterior margins, also posterior margin of the third last abdominal joint light yellow; the middle and next-last joints of the antennae black, distal joint yellowish-red, the four first joints, mouth-parts, and legs reddish-yellow.

The head is remarkably long and narrow, almost beak-shaped, smooth; antennae long, nearest base slender, distinctly thickened outwardly, their next-last joints as long as broad, distal joint rather large; pronotum posteriorly narrower than elytra, anteriorly strongly narrowing, slightly convex, with single marginal punctures, but otherwise smooth and shiny; elytra $\frac{1}{2}$ time longer than pronotum, with 6-7 punctures in the dorsum-(or back) stripe - as well as in the suture- and side-stripe - for the rest smooth and shiny; abdomen strongly tapering, simple punctation, sparse and long hair. L. 5-6 mm.

In the ♂ the sixth ventral joint of abdomen is smooth along the



Scutellum is reddish; a rather broad, posteriorly almost straight transversal band on base of elytra and their posterior margin light yellow; fifth free dorsal joint of abdomen almost black. Posterior margin of pronotum finely marginated, and elytra has only 4-6 punctures in the dorsum-stripe. L. 4-6 mm. (Ganglb.).

Distributed throughout Middle Europe, and found several places in eastern Sweden, in Gotland and in Finland. Has not so far been found here in Denmark; it might most probably be found in Bornholm.

2. Subgenus Lordithon Thoms.

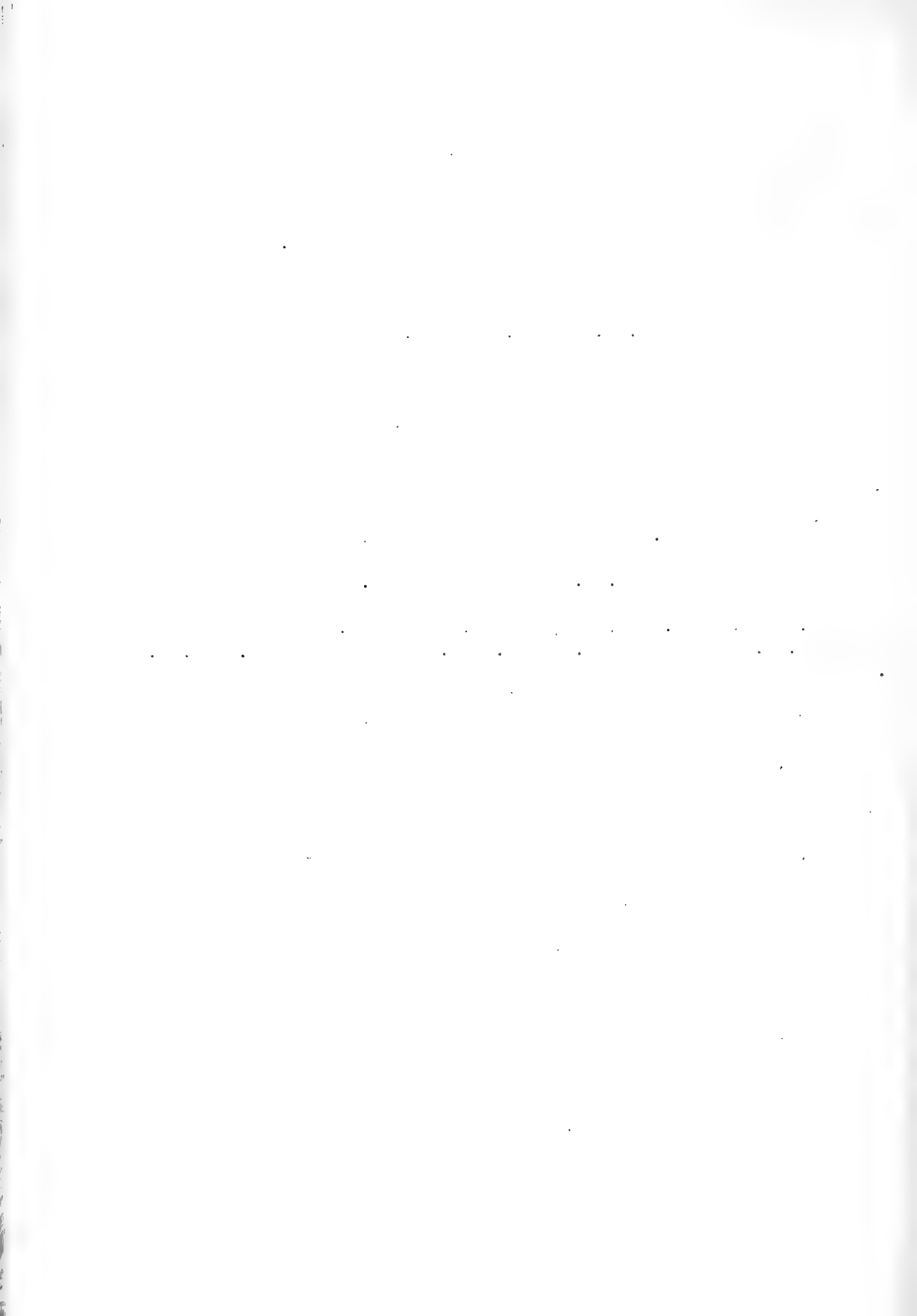
4. B. trimaculatus Payk.

(Payk. Faun. Suec. III, 422; Erichs. Gen. Spec. Staph. 279; Kraatz Ins. D. II, 449; Thoms. Skand. Col. III, 173; Ganglb. Käf. M. II, 364).

Very closely allied to the following species, trinotatus, scarcely longer, but broader, anteriorly and posteriorly shorter tapering, and with more punctures in the dorsal stripe of elytra.

Black, shining; pronotum either entirely brownish-yellow or the sides are brownish-yellow, and the middle pitch-brownish; elytra reddish brownish-yellow, suture, sides, and an out-spread, triangular spot on the outer posterior corners black; abdomen black or pitch-black, posterior margins of its joints reddish-brownish; antennae brownish, reddish at tip, their four-five first joints, mouth-parts, and legs reddish-yellow.

Posterior margin of pronotum is finely marginated, and the



elytral dorsum-stripe as well as the suture stripe with 10-12 punctures. L. 4-5.5 mm. (Kraatz, Ganglb.).

It is distributed in Germany, found at Hamborg, also in Norway, Middle-Sweden and Finland, but heretofore not in Denmark, where its existence however is not improbable.

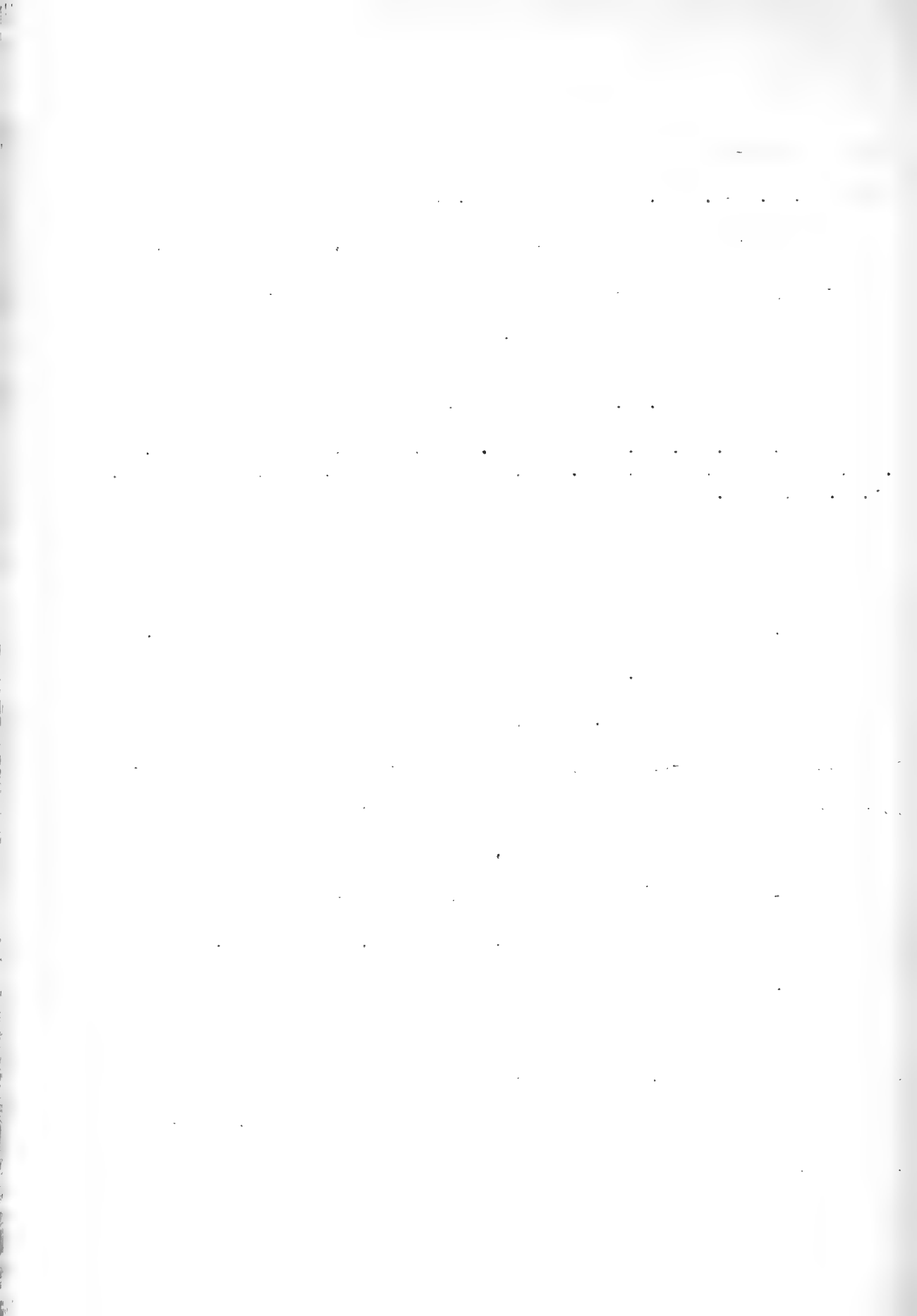
5. B. trinotatus Er.

(Erichs. Käf. Mk. Br. I, 409; Gen. Spec. Staph. 279; Kraatz Ins. D. II, 449; Thöms. Skand. Col. III, 174; Rey Brévip. 1883, 208; Ganglb. Käf. M. II, 364).

Fusiform, like the following species somewhat varying in color; identifiable particularly by the finely marginated posterior margin of pronotum, the number of punctures in the dorsal stripe of elytra, and the color of abdomen.

Reddish brownish-yellow, shiny; head black; pronotum at middle occasionally darkish-brownish; elytra grayish-yellow or brownish yellow, a large spot on the outer posterior corners, and as a rule a small spot on each side of scutellum, often this and the suture black or brownish-black; abdomen reddish-brown, the next-last joints darker; antennae brownish or pitch-black, their base, mouth-parts, and legs yellow.

The head is a little longer than broad; antennae not long, feebly thickened outwardly, their next-last joints as long as broad; pronotum posteriorly narrower than elytra, anteriorly narrowed, feebly convex, together with head smooth and shiny, its posterior margin particularly finely marginated; elytra scarcely $1\frac{1}{2}$ times as



long as pronotum, with 8, more rarely 10 punctures in the dorsal stripe, between the rows of punctures smooth and shiny. Abdomen strongly tapering, with very scattered, rather robust punctation, and sparse, long hair-clothing. L. 4-5.5 mm.

In the ♂ the abdominal sixth ventral joint with a feeble depression along the middle, and with a small carina at base.

Distributed in Europe, and particularly in the autumn frequent here in fungi, mostly in woodlands.

6. B. exoletus Er.

(Erichs. Käf. Mk. Br. I, 409; Gen. Spec. Staph. 280; Kraatz Ins. D. II, 450; Thoms. Skand. Col. III, 174; Rey Brévip. 1883, 212; Ganglb. Käf. M. II, 364).

Narrower and slenderer than trinotatus, which it resembles in color; distinguishable particularly by the number of punctures in the dorsum-stripe of elytra.

Reddish-yellow, shining; head black; elytra straw-yellow, a more or less extensive spot on the outer posterior corners, rarely also a feeble spot around scutellum pitch-black or dark; abdomen often brownish-red or reddish-brown; antennae feebly brownish, their base, mouth-parts, and legs yellow.

Head as long as broad; antennae feebly thickened outwardly, their next-last joints not broader than long; posterior margin of pronotum not marginated; elytra with 10-12 closely set punctures in the dorsal stripe. L. 3.5-5 mm.

In the ♂ the abdominal sixth ventral joint is without carina at base, but is otherwise formed like the preceding species.

Distributed particularly in woodland regions, but rather rare or local; in fungi, particularly in the autumn. Europe.

7. B. pygmaeus Fabr.

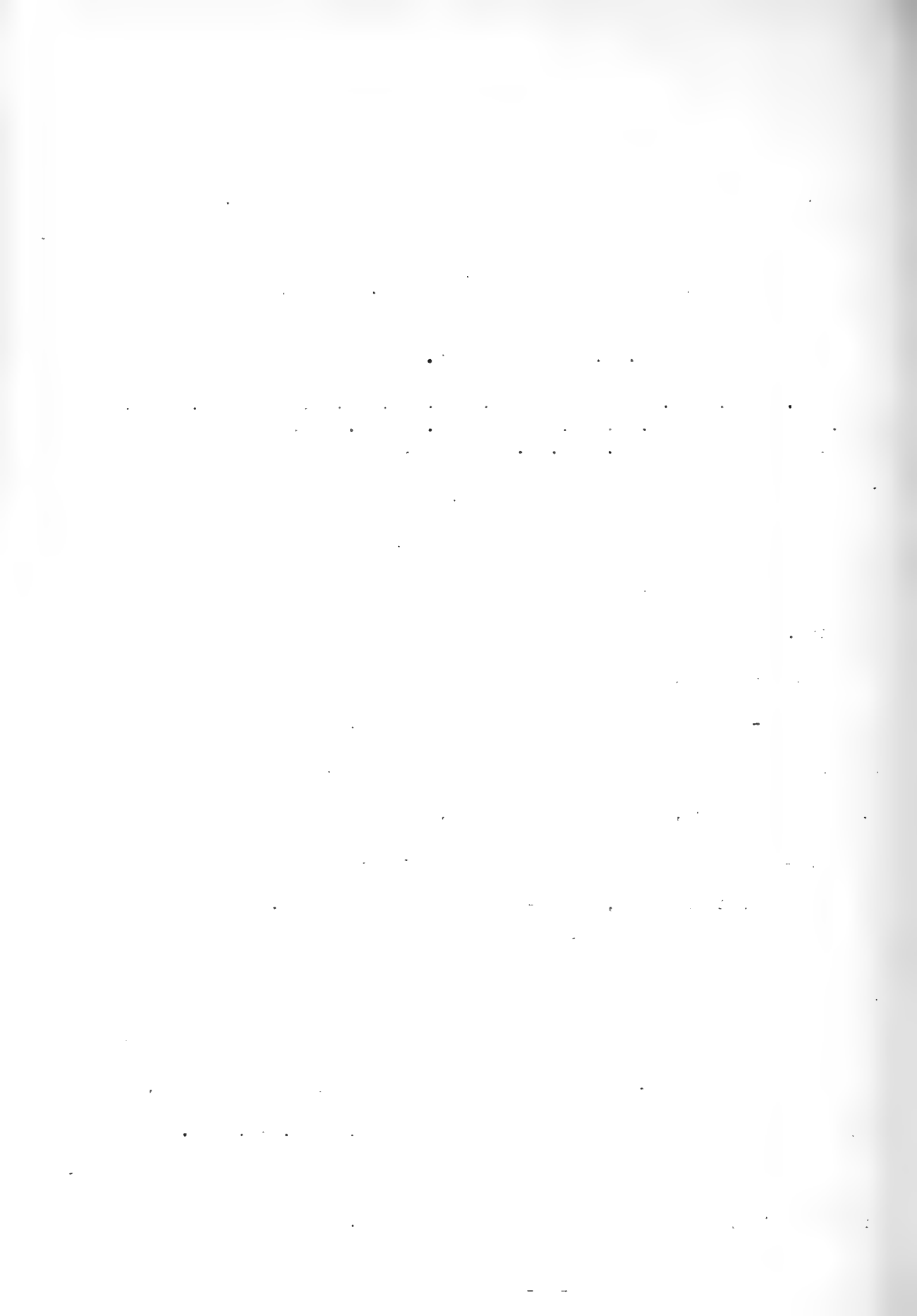
(Fabr. Spec. Ins. I, 339; Erichs. Käf. Mk. Br. I, 410; Gen. Spec. Staph. 280; Kraatz Ins. D. II, 451; Thoms. Skand. Col. III, 174; Rey Brévip. 1883, 217; Ganglb. Käf. M. II, 365).

It varies greatly in color and size, therefore in comparison with the preceding species is particularly identifiable by the proportionately robust antennae, and the few punctures in the dorsal stripe of elytra.

Brownish-yellow, shining; head black; pronotum at middle rather bounded dark-brown or black; elytra straw-yellow, oftenest with a blackish-brown spot on the outer posterior corners, occasionally outspreading black, with a large yellow, downward directed spot on humerus; abdomen lighter or darker brownish-red, occasionally black; antennae dark, their base, mouth-parts, and legs yellow.

The antennae are shorter and more robust than those of the preceding species, distinctly thickened outwardly, their next-last joints transverse; posterior margin of pronotum not margined; elytral dorsal stripe with only 4-6 punctures; the abdomen sparsely punctated, however more dense than of the preceding species. L. 2.5-4.5 mm.

In the ♂ the abdominal sixth ventral joint anteriorly with a fine carina at middle, posteriorly slightly depressed.



Distributed in Europe, and particularly in the autumn common in Denmark, in fungi.

3. Subgenus Carphacis Gozis.

(Megacronus Thoms.).

8. B. striatus Oliv.

(Oliv. Ent. III, 42; Erichs. Gen. Spec. Staph. 275; Kraatz Ins. D. II, 448; Thoms. Skand. Col. III, 166; Rey Brévip. 1883, 192; Ganglb. Käf. M. II, 365).

Of more uniform breadth than the preceding species of this genus, and in comparison with these otherwise easily identified by the remarkably robust antennae, and by the color of elytra.

Black, pitch-black or pitch-brown, shiny; margins of pronotum often translucently reddish-brownish; elytra brownish-red or yellowish-red, but in front of posterior corners with a large, outspread black spot, which however does not include the posterior margin nor reach the suture; posterior margins of the abdominal joints red- or yellow-brownish; antennae pitch-brown, their four first joints, mouth-parts, and legs yellowish-red.

Head and pronotum smooth and shining; head short; antennae short and robust, distinctly shorter than head and pronotum together, their next-last joints more than twice as broad as long; pronotum posteriorly only a little narrower than elytra, anteriorly narrowing, its posterior margin finely marginated;

elytra scarcely $1/3$ longer than pronotum, with 6-8 punctures in dor-

sum- and suture-stripe, the surface otherwise smooth and shiny; abdomen feebly tapering, rather robust, sparsely punctated. L. 5-6 mm.

In the ♂ the abdominal sixth ventral joint posteriorly feebly impressed and smooth, its posterior margin at each side slightly emarginate.

Distributed in Middle- and North-Europe, but everywhere rare; in Denmark it is heretofore found only singly in Lindum Forest south of Hobro on Polyporus fungi (6. 1885 and 6. 1887, Løvendal). In Skaane it is taken at outflowing tree-sap (Thoms.).

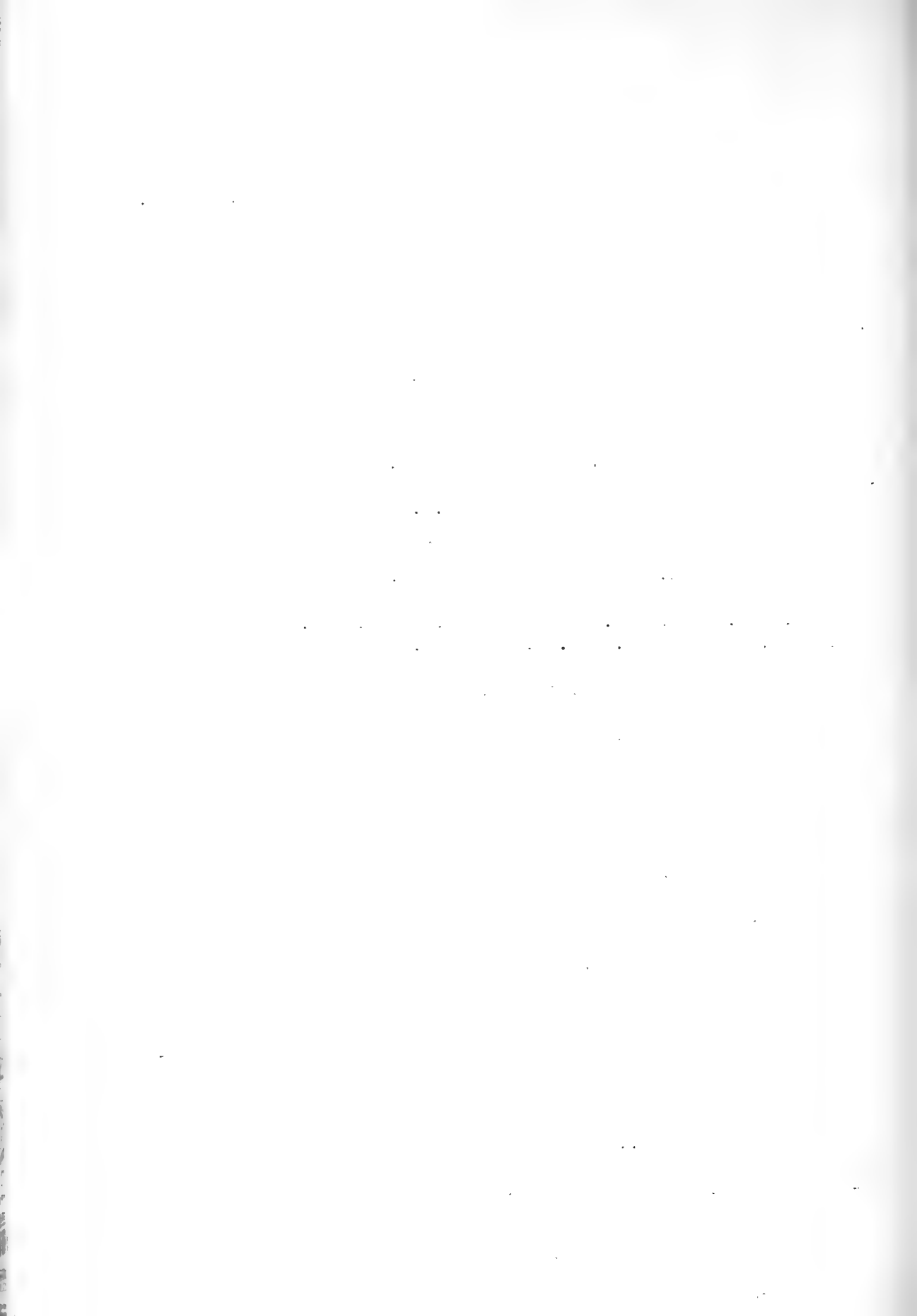
56. Genus Bryocharis Boisd.

(Boisd. Lac. Faun. Ent. I, 502; Thoms. Skand. Col. III, 167; Rey Brévip. 1883, 179; Ganglb. Käf. M. II, 358).

Very closely allied to Bolitobius, from which it differs by the following characteristics:

The last joint of maxillary palpi is thick, at base about as thick as the next-last, conically tapering; labial palpi remarkably thick, their distal joint thick, spoolshaped^{*)}, proportionately long; first joint of middle- and hind-tarsi have on their ventral side several fine, though distinct spines, which are not found in the preceding or following genus; head is short, with somewhat protruding eyes; antennae long and slender, considerably longer than head and pronotum together; pronotum posteriorly as broad as or broader than elytra, and these are unicolorous. In the ♂ the three first joints of the fore-tarsi are more or less dilated, and in connection therewith sev-

^{*)}broadly fusiform—



eral other sex-characters occur in the ♂.

Of the in Middle- and North- Europe distributed species, 4 or 5, 3 are found in Denmark. They live particularly on damp ground under leaves and moss.

Key to Species.

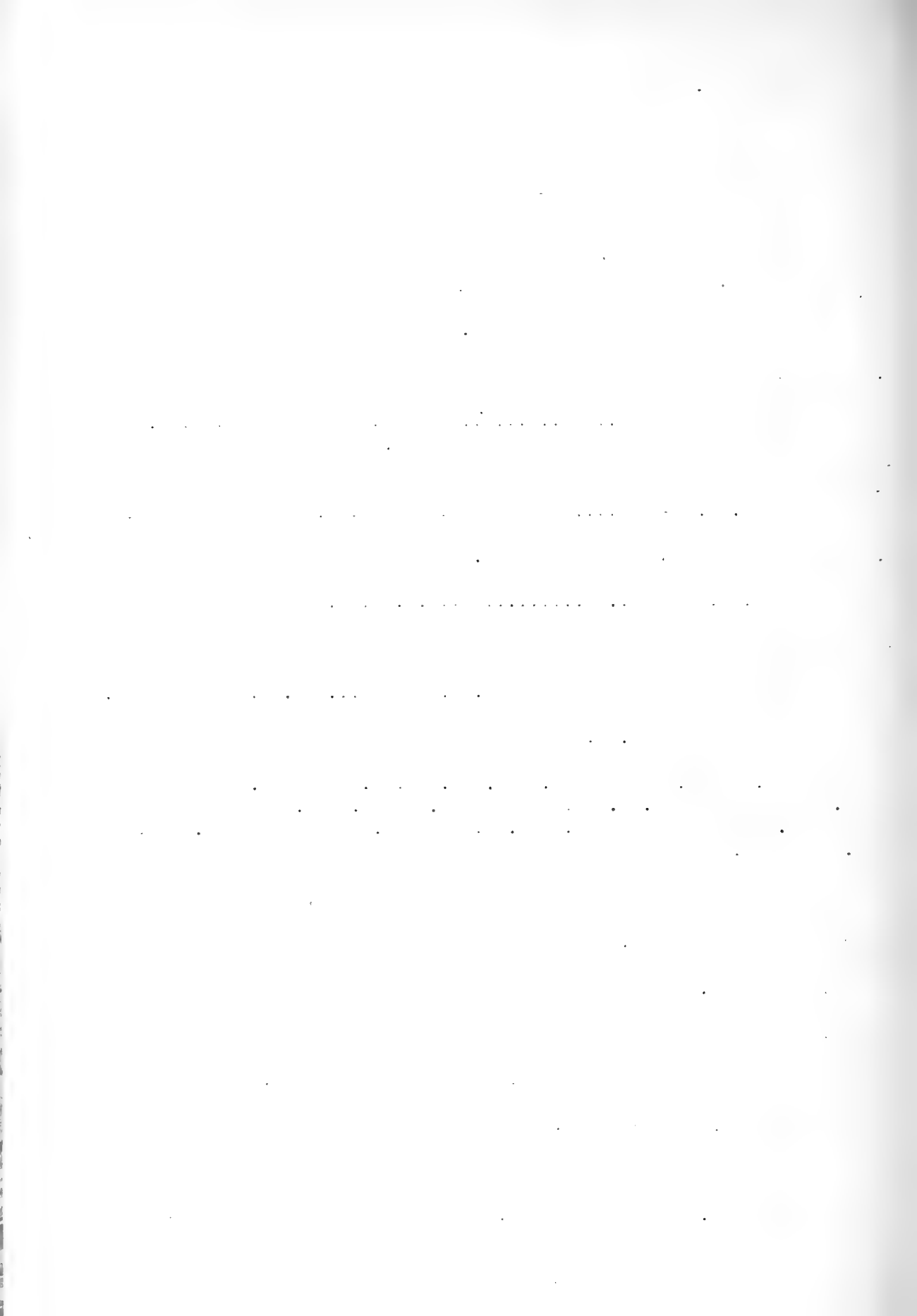
1. Elytra, with the exception of three, sparsely punctated stripes, smooth and shiny 2.
- Elytra allover rather densely and robustly punctated, finely haired. L. 7-9 mm..... 3. B. inclinans Gravh.
2. Elytra to last joint clear yellow. Species rather large and broad. L. 7-9 mm..... 1. B. cingulatus Mannh.
- Next-last joint of elytra dark, the last brownish-yellow. Species smaller and narrower. L. 6-7 mm.... 2. B. analis Payk.
1. B. cingulatus Mannh.

(Mannerh. Brach. 64; Erichs. Käf. Mk. Br. I. 404; Gen. Spec. Staph. 270; Kraatz Ins. D. II, 443; Thoms. Skand. Col. III, 168; Rey Brévip. 1883, 182; Ganglb. Käf. M. II, 359. - analis Gyllh. Ins. Suec. II, 269).

A beautiful, conspicuous, and noticeable species, recognised principally by its color.

Shining black; elytra, the sixth free abdominal joint, and the posterior half part of the fifth bright red; antennae pitch-black, their base and the two last joints, rarely the last only, mouth-parts, and legs reddish-yellow.

The body (Fig. 108) is fusiform, rather broad slightly convex



head and pronotum specular shiny, and with the exception of a few scattered bristle-bearing punctures, smooth; antennae robust, distinctly longer than head and pronotum together; pronotum posteriorly amply as broad as base of elytra, anteriorly narrowing; elytra $\frac{1}{2}$ longer than pronotum, specular shining with three indistinct punctate stripes, of which the middle one, dorsal stripe, which lies closer the side than the suture, has only 3-5, the suture stripe only 5-6 punctures; abdomen is long tapering, at middle with single, on sides scattered, and rather robust punctation, sparsely grayish-yellow haired, with many outstanding, black bristles. L. 7-9 mm.

In the ♂ the distal joint of the antennae is elongated, larger and longer than in the ♀; the three first joints of the fore-tarsi are strongly dilated, sixth abdominal ventral joint with middle groove, and robust scabrous punctation, at tip with triangular elongation.

Fig. 108. Bryocharis cingulatus Mannh.

On damp woodland ground under leaves and moss, in hollow trees, and old rotten stubs, in gardens under twigs, and in plant fertilizer; Distributed in Europe, the greater part of North Asia, and North America, but everywhere, also in this country, rare and sparse.

2. B. analis Payk.

(Payk. Mon. Staph. 47; Erichs. Käf. Mk. Br. I, 403; Gen. Spec. Staph. 269; Kraatz Ins. D. II, 442; Thoms. Skand. Col. III, 167; Rey Brévip. 1883, 184; Ganglb. Käf. M. II, 359).

Smaller, considerably narrower and with shorter antennae than cingulatus, which it is almost like in color, punctation and sex-

characters; but:

The fore-coxae are yellow, and pronotum often yellowish-red (v. merdarius) like the elytra, or brownish at middle; of the antennae the next-last joint is dark like the nearest preceding, and the distal joint is not as in cingulatus clear yellow, but brownish-yellow; the sutural stripe of elytra has 8-10 punctures. L. 6-7 mm.

Like the preceding species on damp or half-damp woodland ground under foliage, moss and twigs, less distributed than this, but somewhat more frequent in Denmark. The variety with yellowish-red pronotum is seemingly not rarer than the typical form with entirely black pronotum.

3. B. inclinans Gravh.

(Gravh. Mon. 33; Erichs. Käf. Mk. Br. I, 405; Gen. Spec. Staph. 271; Kraatz Ins. D. II, 444; Thoms. Skand. Col. III, 168; Rey Brévip. 1883, 186; Janglb. Käf. M. II, 359).

More often not as broad as cingulatus, but about of same length; easily identified by the densely punctated, finely haired elytra.

Yellowish-red or light brownish-red, shining; the head and abdomen, with exception of the latter's two-three last joints, black; the middle joint of the antennae often pitch-brownish.

The head is smooth; Antennae slender, scarcely thickened outwardly, considerably longer than head and pronotum together; pronotum posteriorly somewhat broader than elytra, slightly convex, with very feeble, single punctures; elytra 1/3 longer than pronotum, rather

robust, dense punctation, finely haired; abdomen with coarse, and sparse punctation, sparse and long hair. L. 7-9 mm.

In the ♂ the two first joints of the fore-tarsi, strongly, the third feebly dilated; middle-tibiae strongly broadened toward tip, and have at the end two long spiniform processes, of which the inner is robust, and obliquely truncated at tip; first joint of middle-tarsi is plate-shaped, and roundedly widened downwardly; sixth abdominal ventral joint with a narrow incision in tip.

On damp woodland ground under leaves and moss or in old stubs; distributed in the greater part of Europe, but everywhere, here also, rare or very rare.

A very closely allied species, B. formosus Gravh., is found in Middle Europe, and in Finland. It is smaller, narrower, and somewhat of lighter color; elytra is very sparsely punctated. In the ♂ the fore-tarsi only feebly, middle-tibiae and Middle-tarsi not dilated. L. 6-7 mm. - The prospect of finding it in Denmark slight.

57. Genus Bryoporus Kr.

(Kraatz Ins. D. II, 452; Thoms. Skand. Col. III, 169; Rey Brévip. 1883, 221; Ganglb. Käf. M. II, 366).

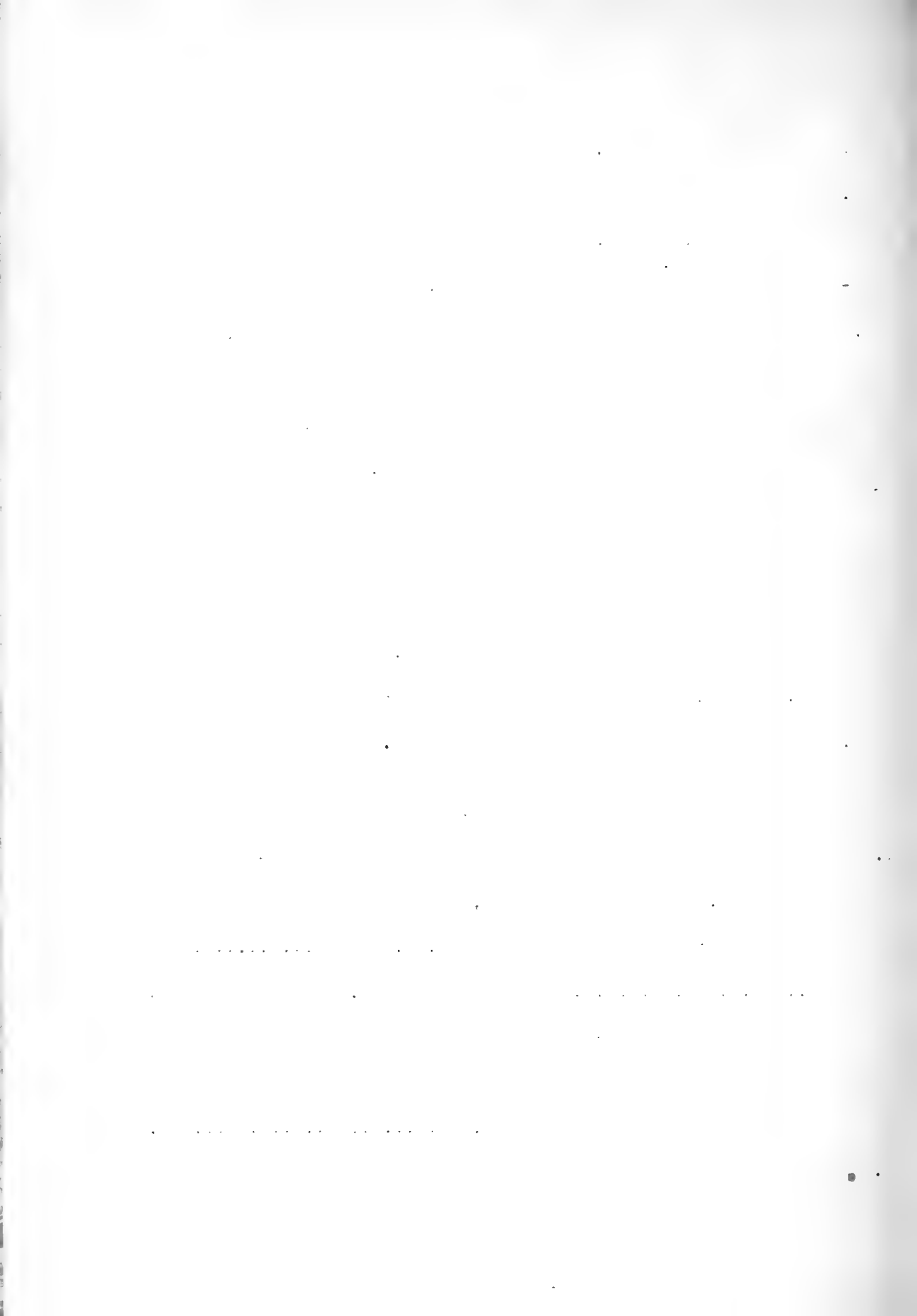
Very closely allied to each of the two preceding - as well as to the following genus. From Bolitobius, with which it most nearly corresponds in form and length of last joint of maxillary palpi, it differs mainly in, that the first joint of labial palpi is proportionately thick, and longer than the second, and that elytra is unicolorous. From Bryocharis, which it resembles most in color and appear-

ance, it differs namely in, that the antennae are rather short, eyes flat, last joints of maxillary palpi finer and either more cylindrical or more feebly tapering, and that the first joints of middle- and hind-tarsi on ventral side is haired only, but without distinct spines. To following genus, Mycetoporus, it forms a transition, in that the last joint of maxillary palpi is occasionally (especially in B. crassicornis) distinctly narrower than the next-last, not however nearly as finely or styliiform as in that genus.

Of the three or four species distributed in North and Middle Europe two are heretofore found in Denmark, a third occurs in Skaane, which presumably may be discovered here also, and is included in the following. They live principally on damp ground under foliage and moss, an occasional one of them also in fungi.

Key to Species.

1. The two middle bristle-bearing punctures at the fore-margin of pronotum, are placed far back, and farther from fore-margin than the distance from each other. L. 5-7 mm.....
..... 1. B. cernuus Gravh.
- The two middle bristle-bearing punctures at the fore-margin of pronotum are close to the fore-margin, closer to same than the distance from each other 2.
2. Dorsum of elytra besides the punctated stripes of suture, dorsum, and side with several fine, here and there in feeble grooves



placed, punctate rows. Head brownish-red. L. 4-6 mm.....

..... 2. B. rufus Er.

- Elytra between the usual three punctate rows smooth. Head

black. L. 4 mm..... 3. B. crassicornis Makl.

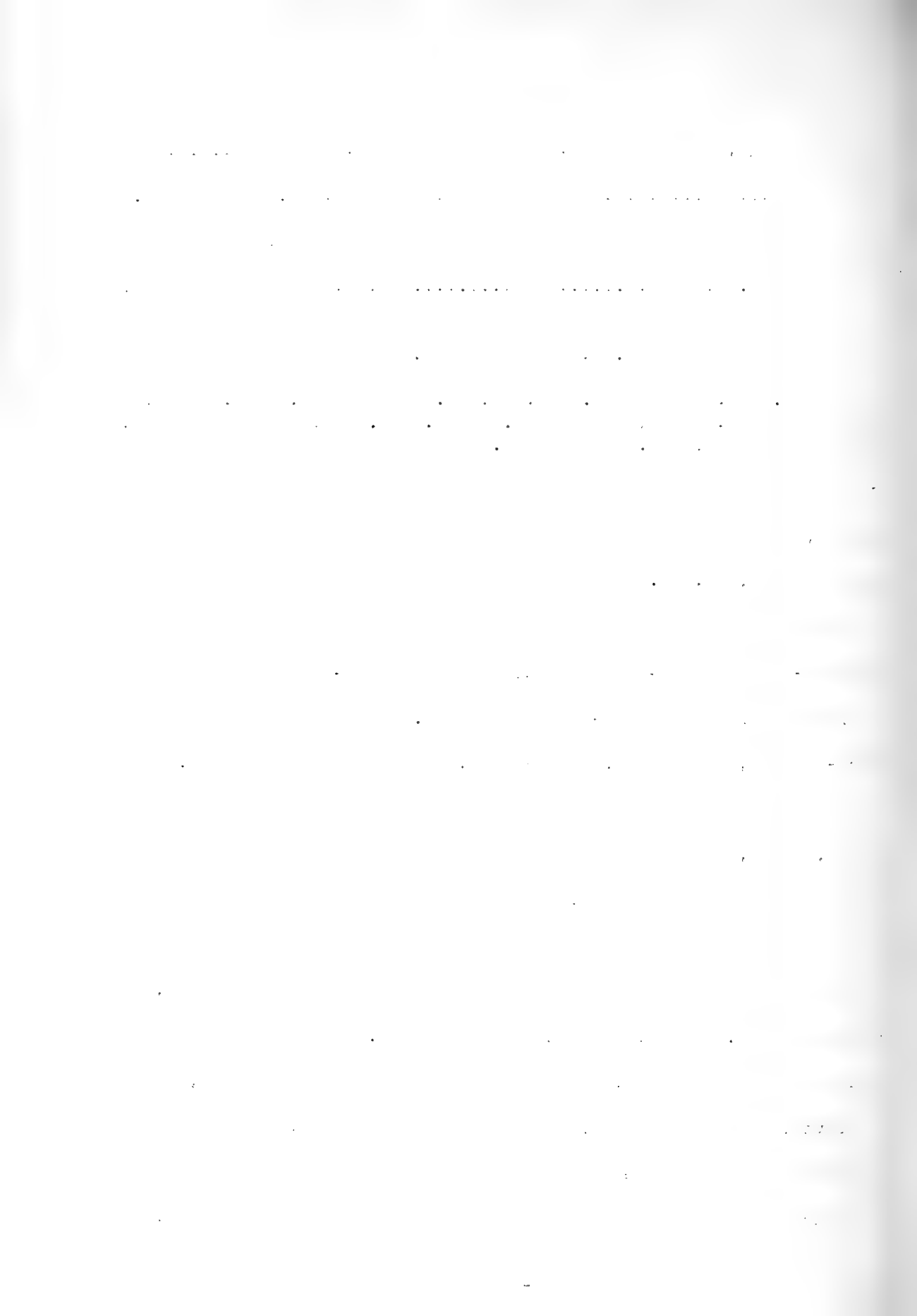
1. B. cernuus Gravh.

(Gravh. Mon. 31; Erichs. Käf. Mk. Br. I, 406; Gen. Spec. Spaph. 272; Kraatz Ins. D. II, 453; Thoms. Skand. Col. III, 169; Rey Brévip. 1883, 224; Ganglb. Käf. M. II, 366).

In form, color and size much like Bryocharis analis, but with shorter, less robust antennae, entirely flat eyes, and feebly punctated pronotum, et. al.

Black, shining; elytra and posterior margins of the abdominal joints brownish-red or red; - occasionally the last two-three abdominal joints or pronotum are also pitch-brown or red (v. merdarius); antennae are pitch-colored, their base, mouth-parts, and legs reddish yellow.

The body is narrowly fusiform; the head thicker than in Bryocharis analis, shiny, and the eyes, which in this species are somewhat protruding, are here quite flat, and set completely in the rounding of the head; antennae scarcely reach the posterior margin of pronotum, and are only feebly thickened outwardly, their distal joint in ♂, in contrast to Br. analis, not longer than in ♀. Pronotum is posteriorly as broad as elytra, anteriorly rather strongly narrowing, slightly convex, scattered and particularly fine punctation, the surface extremely finely transversally aciculated; the two middle bristle-bearing punctures at the anterior margin of pronotum are set far back,



and farther from the anterior margin than their distance between each other. Antennae $1/3$ longer than pronotum, shiny and naked, and have besides the usual three punctated stripes (suture- dorsal- and side-stripe) a few incomplete rows of fine punctures between suture- and dorsal-stripe, and between this and the side-stripe; dorsal-stripe has 5-8 punctures. Abdomen gradually tapering, with rather robust and dense punctation, sparse yellow hair and with many outstanding side-bristles. L. 5-7 mm.

In the ♂ the antennae is a little more slender than in the ♀, their next-last joints hardly as broad as long, in the ♀ distinctly transverse.

On damp woodland ground, and bogs, under leaves and moss, but very rare, and seemingly local (Ermelund, Frederiksdal, Donse, Moor at Hillerød, and several other places in Northsjaelland). Distributed in the greater part of Europe.

2. B. rufus Er.

(Erichs. Käf. Mk. Br. I, 407; Gen. Spec. Staph. 273; Kraatz Ins. D. II, 454; Thoms. Skand. Col. III, 169; Rey Brévip. 1883, 227; Ganglb. Käf. M. II, 366).

Closely allied to cernuus, but lighter of color, and oftenest smaller, also identifiable by the position of the anterior marginal punctures of pronotum.

Light brownish-red, shining; metasternum and base of the foremost joints of abdomen oftenest reddish-brown or pitch-brown; anten-

nae brownish, their first four joints, mouth-parts, and legs reddish-yellow. Occasionally the vertex and sides of elytra are dark.

The head is smooth; eyes flat; next-last joints of antennae distinctly transverse; the two middle bristle-bearing punctures of the anterior margin of pronotum is set close to the anterior margin, and ~~and~~ much closer to this than their distance from each other, pronotum otherwise with scattered and ~~and~~ very fine, though distinct punctation. Antennae are broader and $1/3$ longer than pronotum, and has besides the usual three punctated stripes (suture-, dorsal- and side-stripes) between these several finer, irregular or here and there in feeble grooves set, punctate rows; dorsal stripe has 5-8 larger punctures. Abdomen with very robust and rather dense punctation, short yellow hair with outstanding side-bristles. L. 4-6 mm.

The difference between ♂ and ♀ is not distinct. (Kraatz, Ganglb.)

Is heretofore not found in Denmark, but as it occurs in Skaane (Thoms.) and also is distributed in Middle- and North Europe, it is not improbable that it may be encountered here in this country.

3. B. crassicornis Mäkl.

(Mäklin Myc. Symb. 1847, 9. - castaneus Hardy et Bold, Trans. Tynes. 1851, II, 78; Rey Brévip. 1883, 231).

More often considerably smaller than rufus, identified particularly by black head, unpunctated pronotum, and smooth elytral unpunctated intervals. It is in appearance very much like Mycetoporus punctus, from which it however is easily distinguished by the larger

distal joint of maxillary palpi, while this is somewhat smaller and narrower than the next-last, as well as distinctly tapering, yet not nearly as fine as that of the following genus.

Black or brownish-black, strongly shining; head deeply black; prosternum, pronotum, and elytra yellowish-red, posterior margins of abdominal joints translucent yellow-brownish; mouth-parts brownish; Antennae pitch-black, their first three-four joints and legs reddish-yellow.

Fusiform; head smooth and shiny with flat eyes; antennae short and stout, shorter than head and pronotum together, from the fifth joint strongly thickened, their fourth joint a little longer than broad, the fifth transverse, the following middle and next-last joints about same length and breadth, strongly transverse. Pronotum is posteriorly about as broad as elytra, a little broader than long, anteriorly narrowing, slightly convex, with exception of a few marginal punctures, entirely smooth and shiny; the two middle, bristle-bearing punctures at anterior margin are very close to this, much closer than the two punctures to each other. Elytra is $1/3$ longer than pronotum, and has the usual three punctated stripes, of which the dorsal stripe has 4-5 rather large punctures, intervals without punctation, smooth and shiny. Abdomen tapering, short and fine yellow hair, on the anterior part of the joints rather robust and dense, on the posterior part not punctated, and smooth. L. 4 mm.

The difference between ♂ and ♀ is not distinct.

A mountainous species, or particularly northern species, known

from the Pyrenees, Middle England, Scotland, and Finland, and everywhere particularly rare. It occurs, like the other species of the genus, quite surely under leaves and moss on damp ground, but also in fungi. In Denmark it has recently been found in Dyrehaven near Copenhagen (3. 10. 1909 Fru West, 1 specimen in fungus).

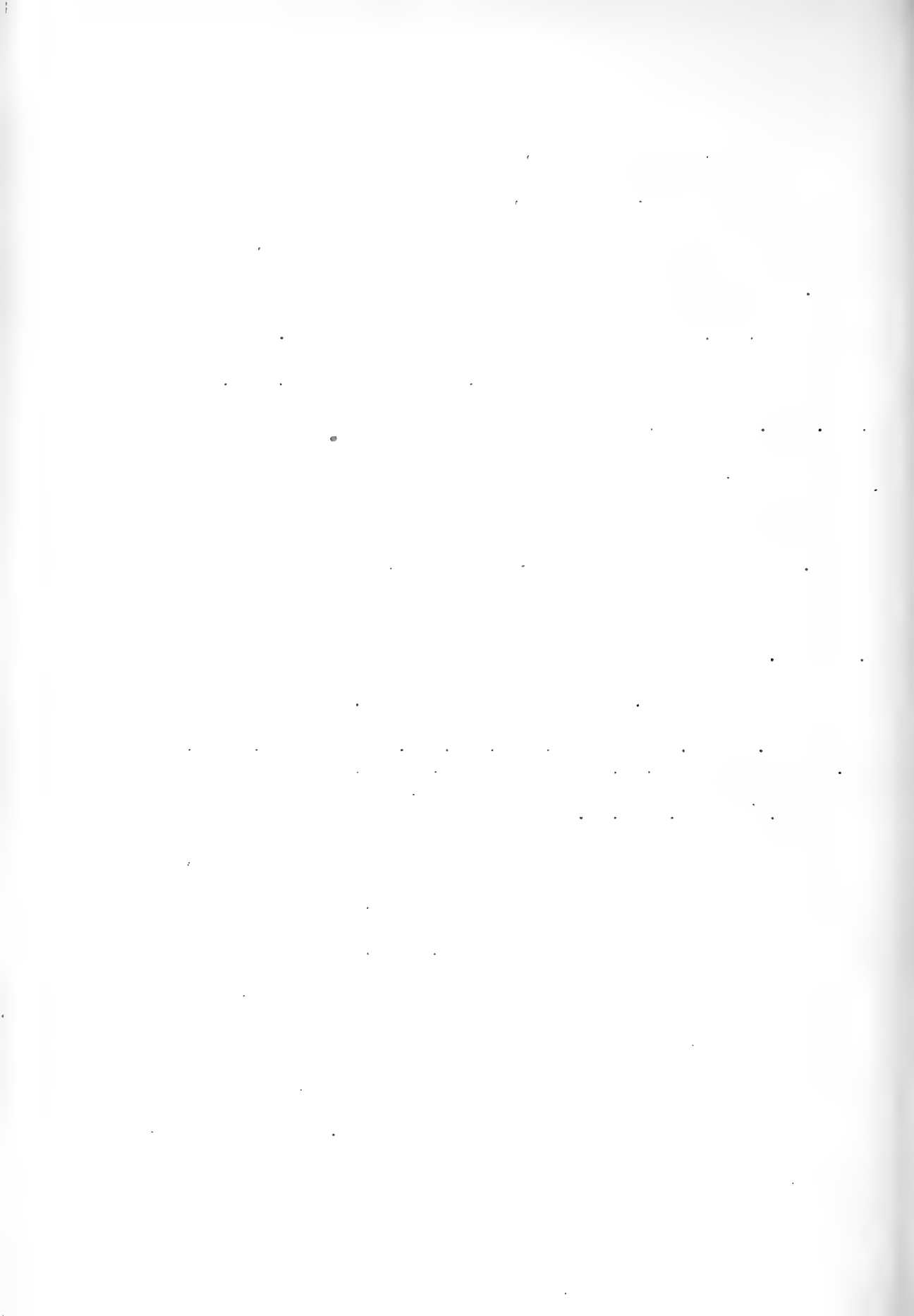
A very closely allied species is B. rugipennis Pand. (cf. Fowler, Col. Br. Isl. II, 209). It is of same form and size, but is somewhat of darker color, antennae less sturdy, and the intervals between the punctate stripes of elytra are more or less distinctly rugulose-punctate. The dorsum stripe has 6-8 punctures. - It is distributed to about same extent as crassicornis, and is also found in Norway (Cl. Grill).

58. Genus Mycetoporus Mannh.

(Mannerh. Brach. 62; Erichs. Käf. Mk. Br. I, 411; Gen. Spec. Staph. 281; Kraatz Ins. D. II, 455; Thoms. Skand. Col. III, 160 and 165; Mycetoporus and Ischnosoma; Rey Brévip. 1883, 232 and 274; Mycetop. and Ischnos.; Ganglb. Käf. M. II, 376).

This differs from the three preceding genera mainly by this, that the last joint of maxillary palpi is very small, styliform, much finer and shorter than the next-last (Fig. 109).

The body is more or less narrowly fusiform, occasionally almost of uniform breadth. In the majority of species the antennae do not reach over or beyond the posterior margin of pronotum, but in a few they are considerably longer (subgenus Ischnosoma). Head and pronotum naked, shiny and smooth, this one however has, besides single bristle-bearing punctures along the margins, occasionally also dis-



ciform punctures on sides. Elytra, like in the three preceding genera with punctate suture-stripe, dorsal-stripe, and side-stripe, besides these, several species have one or more punctate rows in the intervals.

Fig. 109. Maxillary palpi of Mycetoporus brunneus Marsh.

The abdomen is oftenest tapering; legs slender, tibiae spiniferous, tarsi 5-jointed, joints of fore-tarsi in ♂ not dilated, hind-tarsi long with long first joint.

The species live on damp ground under leaves and moss, some also encountered at fungi. About a score species are distributed in middle and North Europe, and of these, 10 is heretofore found in this country.

Key to Subgenera and Species.

1. Antennae short or rather short, and do not reach - or very little - out over the posterior margin of pronotum: 1. subgenus Mycetoporus s. str..... 2.
- Antennae long and slender, considerably longer than head and pronotum together: 2. subgenus Ischnosoma Thom..... 10.
2. Pronotum besides the ordinary marginal punctures with 1-3 punctures on sides (disciform punctures) 3.
- Pronotum without disciform, marginal punctures only..... 4.
3. Third joint of maxillary palpi rather slender, only feebly thickened. Body fusiform, abdomen strongly tapering. L. 4-5.5 mm. 1. M. punctus Gyll.

- Third joint of maxillary palpi rather strongly thickened toward tip (Fig. 109). Body of almost uniform breadth, or abdomen only tapering posteriorly. L. 3.5-5.5 mm.....
..... 2. M. brunneus Marsh.
- 4. Elytra with 1-2 fine punctate rows between the punctate suture- and dorsal-stripe 5.
- Elytra between the punctate suture- and dorsal-stripe without punctures 8.
- 5. Elytra with 2 punctate rows between the punctate suture- and dorsal-stripe, also with 1 punctate row between dorsal- and side-stripe. L. 4-5.5 mm.....3. M. rufescens Steph.
- Elytra between suture- and dorsal-stripe with 1, abbreviated punctate row, consisting of few punctures..... 6.
- 6. Abdomen of rather uniform breadth. Body reddish-yellow, only vertex and base of abdominal joints occasionally dark.
L. 2.5-4 mm. 4. M. debilis Mäkl.
- Abdomen distinctly and gradually tapering 7.
- 7. Body black; posterior margin of elytra and often also the suture reddish-brown. L. 3-4 mm..... 5. M. nanus Er.
- Head and abdomen pitch-black or pitch-brown; pronotum and elytra reddish-yellow. L. 2.5-3 mm..... 6. M. tenuis Muls.
- 8. Elytra amply 1/3 longer than pronotum. Body black with red elytra. L. 4.5-6 mm.....7. M. splendens Marsh.
- Elytra scarcely longer than pronotum. Body yellowish-red with darker abdomen. Species smaller..... 9.

9. Antennae peculiarly strongly thickened outwardly, their next-last joints more than twice as broad as long. L. 3.5 mm.
.....8. M. clavicornis Steph.
- Antennae less strongly thickened outwardly, their next-last joints only 1½ times as broad as long. L. 4.5 mm.....
..... 9. M. forticornis Fauv.
10. Antennae thin, only feebly thickened outwardly. Head narrow, longer than broad. L. 3.5-5 mm... 10. M. splendidus Gravh.
- Antennae more robust, distinctly thickened outwardly. Head as broad as long. L. 4-5.5 mm.....11. M. longicornis Mäkl.

1. Subgenus Mycetoporus s. str.

1. M. punctus Gyllh.

(Gyllh. Ins. Suec. II, 250; Erichs. Käf. Mk. Br. I. 412; Gen. Spec. Staph. 283; Kraatz Ins. D. II, 459; Thoms. Skand. Col. III, 161; Rey Brévip. 1883, 245; Ganglb. Käf. M. II. 370).

A fusiform, rather broad species, with strongly tapering abdomen, and of same size as rufescens, as well as by the form particularly recognizeable by the, as a rule, distinct disciform punctures of pronotum, and the rather slender third joint of maxillary palpi.

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Yellowish-red or brownish-red, strongly shining; Head, metasternum, and base of abdominal joints black or pitch-brownish; middle of antennae dark, their base and tip, mouth-parts, and legs reddish-yellow.

The head is smooth and shiny; Antennae not long, rather robust,

their third joint a little longer than the second, the next-last $1\frac{1}{2}$ times as broad as long. Pronotum posteriorly as broad as elytra, anteriorly strongly narrowing, slightly convex, and has besides the usual marginal punctures, also on each side 2, more rarely 3 fine, as a rule distinct punctures in line with the outer bristle-bearing puncture of the anterior margin. Elytra are $\frac{1}{3}$ longer than pronotum, and has 8-10 punctures in the dorsal stripe, between this and the suture-stripe also a feeble, often almost obliterated row of few or more punctures (2-8). The abdomen is strongly tapering, rather robustly, but not densely punctated, and middle of first free joint with smooth, fine hair. L. 4-5.5 mm.

The difference between ♂ and ♀ in this and the following species of the subgenus is not distinctly developed.

Distributed in North- and Middle Europe, very rare here; under leaves, in alluvium, and at fungi (Hvorup Hills, at Kolske Dam in Vendsyssel; Odense; at Fursø, Tisvilde and several other places). - A variety from the typical form: var. semirufus Heer, without disciform punctures on pronotum, and an other: var. bicolor Mäkl., with 3 disciform punctures, are heretofore not identified here in Denmark.

2. M. brunneus Marsh.

(Marsh. Ent. Brit. 524; Ganglb. Käf. M. II, 371. - lepidus Gravh. Mon. 26; Erichs. Käf. Mk. Br. I, 413; Gen. Spec. Staph. 284; Kraatz Ins. D. II, 462; Thoms. Skand. Col. III, 163; Rey Brévip. 1883, 252).

A rather narrow, uniformly broad and elongated species, as well as by the form is identifiable by the disciform punctures of pro-

notum, and the rather strongly thickened third joint of maxillary palpi (Fig. 109), otherwise in several respects, mainly though in color, rather variable. A few varieties are occasionally recognized as individual species.

Pitch-brown, shining; The head oftenest black; posterior margins of abdominal joints reddish; antennal base, mouth-parts, and legs reddish-yellow. Pronotum and elytra, or their humeri and posterior margin, brownish-red; the body is frequently brownish-red or yellowish-red, and the head alone darker. In the var. longulus Mannh. the body is shiny black, elytra red, around scutellum and on sides oftenest darker. In v. bimaculatus Boisd. — ruficornis Kr. (Ins. D. II, 461) the head is black, pronotum blackish-brown, elytra red with an obliterated brownish transversal spot on their posterior half-part; antennae entirely reddish-yellow or the middle only brownish.

The thorax is naked and shiny; antennae not longer than head and pronotum together, their third joint longer than the second, the distal joints increasingly, but not strongly transverse, the next-last about $1\frac{1}{2}$ times as broad as long. Pronotum posteriorly as broad as elytra,

ra, hardly broader than long, anteriorly narrowed, slightly convex, the sides as a rule with three obliquely placed disciform punctures; at times the upper of these is lacking; in v. bimaculatus only a single puncture is found on middle of side. Elytra are $\frac{1}{3}$ longer than pronotum, and has in the dorsal stripe 6-8 punctures, inside of these oftenest one, or two punctures set in row; abdomen of rather uniform

breadth or only tapering posteriorly, finely haired, with rather robust and dense punctation with elongate, posteriorly inserted punctures; middle of first free joint is smooth. L. 3.5-5.5 mm.

Distributed throughout the greater part of Europe; typical form rather frequent here on all kinds of damp ground. Var. longulus, which is rare, is now and then found together with the typical form; var. bimaculatus is very rare (at Madum Lake south of Aalborg in alluvium). - Both varieties are connected with the typical form by intermediates.

3. M. rufescens Steph.

(Steph. Ill. Brit. V, 170; Ganglb. Käf. M. II, 369. - lucidus Erichs. Käf. Mk. Br. I, 415; Gen. Spec. Staph. 286; Kraatz Ins. D. II, 459; Thoms. Skand. Col. III, 162; Rey Brévip. 1883, 243).

Fusiform, of same size as punctus and easily identified among all our species by the punctation of elytra.

Pitch-black or pitch-brown, strongly shining; elytra and abdomen often with a feeble bluish reflection; margins of pronotum, occasionally the entire pronotum, posterior margin and humeri of elytra, also posterior margins of the abdominal joints red-brownish; base of antennae, mouth, and legs reddish-yellow.

Head and pronotum naked and shiny; antennae as long as head and pronotum together, thickened outwardly, their next-last joints transverse; pronotum posteriorly as broad as elytra, anteriorly rather strongly narrowing, slightly convex, the four bristle-bearing punctures of anterior margin set far from the margin. Elytra are $1/3$ lon-

ger than pronotum, and besides the usual three punctate stripes, which individually bears many punctures (12-15), has also three other densely punctate rows, of which one lies between side- and dorsal-stripe, and two, somewhat irregular, between the latter and the suture-stripe. The abdomen is strongly tapering, with rather robust, scattered punctation, and finely haired. L. 4-5.5 mm.

On damp forest- or marshy ground, under leaves and moss, also at fungi, distributed, but everywhere rare. North and Middle Europe.

4. M. debilis Mäkl.

(Mäkl. Mycetop. Symb. 1847, 14; Seidl. Faun. Balt. 1891, 411).

Narrow and rather of uniform breadth, otherwise identified by the color, the antennal short, thickened third joint, and elytral punctation.

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Reddish-yellow, shining; head and abdomen more reddish, the vertex, and base of abdominal joints occasionally darker.

Head and pronotum shiny; antennae short, scarcely thickened outwardly, their third joint short conical, at tip as thick as the second, both equally short, the next-last ones feebly transverse. Pronotum posteriorly as broad as elytra, as long as broad, anteriorly feebly narrowing, without disciform punctures on sides; elytra are somewhat longer than pronotum, and has in the dorsal stripe 6-7 punctures, inside of this also a short row of punctures posteriorly with few punctures (2-3); abdomen almost uniformly broad, with rather robust and dense punctation, finely haired. L. 2.5-4 mm.

A single specimen of this species, which ordinarily is known from Finland only, and which somewhat resembles a small, teneral M. brunneus (cf. Kraatz Ins. D. II, 463 u. lepidus), was found beneath moss on a heather-clothed hill near Hedegaarden south of Aalborg (9. 1891, Auth.).

5. M. nanus Er.

(Erichs. Käf. Mk. Br. I, 415; Gen. Spec. Staph. 286; Kraatz Ins. D. II, 463; Rey Brévip. 1883, 256. - Baudueri Muls. et Rey Opusc. Ent. XVI, 1875, 200; Rey Brévip. 1883, 259; Ganglb. Käf. M. II, 375).

A small, narrowly fusiform species with tapering abdomen, in connection herewith mainly recognized by its color, and by the punctation of elytra.

Black or pitch-black, strongly shining; the posterior margin of elytra, and often also the suture, and the posterior margins of the abdominal joints red-brownish; antennal base, and the legs brownish-yellow or brownish-red; occasionally the pronotum or its margins only are red-brownish.

The head is narrow; the antennae short, only feebly thickened outwardly, their third joint as long as the second, but much thinner, the next-last feebly transverse. Pronotum posteriorly as broad as elytra, as long as broad, anteriorly strongly narrowing, without disciform punctures on sides. The elytra are $\frac{1}{3}$ longer than pronotum, with 7-9 punctures in the dorsal stripe, inside of this with still another punctate row with at least 4 punctures. The abdomen long and smoothly tapering, with rather robust and dense punctation. L. 3-4 mm.

On damp forest- or marsh-ground, but not common, in several localities, for instance in northern Jutland, rare. Distributed in Middle and North Europe, though it has heretofore not occurred in Sweden.

6. M. tenuis Muls.

(Muls. et Rey Op. Ent. II, 67; Kraatz Ins. D. II, 464; Thoms. Skand. Col. III, 163; Rey Brévip. 1883, 260. - Mulsanti Ganglb. Käf. M. II, 375).

Narrowly fusiform like nanus, and oftenest somewhat smaller, with with shorter pronotum and elytra, also distinguishable by the color.

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Reddish-yellow, shining; the head, metasternum, and abdomen, except the posterior margins of the joints, pitch-black or pitch-brown; the antennae oftenest entirely reddish-yellow.

The antennae are a little more robust than in nanus, their third joint as long as the second, but thinner, the next-last distinctly transverse; pronotum as broad as elytra, broader than long, anteriorly rather feebly narrowing, without disciform punctures on the sides; elytra only a little longer than pronotum, punctation about same as in the preceding species; the abdomen rather feebly tapering, finely and sparsely punctated. L. 2.5-3 mm.

A single specimen of this species was found near Mariager under heather (O. Jacobsen 8. 1884). Said to be distributed throughout the greater part of Europe (Ganglb.); is not found in Sweden and Norway, but in Finland and Lapland (Grill Cat. Col.).

7. M. splendens Marsh.

(Marsh. Ent. Brit. 524; Erichs. Käf. Mk. Br. I, 411; Gen. Spec. Staph. 282; Kraatz Ins. D. II, 460; Thoms. Skand. Col. III, 161; Rey Brévip. 1883, 236; Ganglb. Käf. M. II, 372).

About of same size as punctus, and like it fusiform, otherwise easily identified by the color.

Black, strongly shining; elytra red; posterior margins of the abdominal joints oftenest red-brownish; antennae pitch-brown, their first three joints, mouth-parts, and legs yellowish-red; anterior coxae, and femora of posterior legs often brownish.

The head is rounded, a little broader than long; the antennae rather robust, their next-last joints transverse; pronotum posteriorly as broad as elytra, its sides without disciform punctures; elytra amply $1/3$ longer than pronotum, and with 4-9 punctures in the dorsal stripe, without punctures between this and the suture-stripe; the abdomen smoothly tapering, not dense, but robust and deep punctation, the middle of first free dorsal joint smooth. L. 4.5-6 mm.

It is found in Skaane (Thoms.), and said to be distributed throughout the greater part of Europe (Ganglb.); heretofore not discovered in Denmark.

8. M. clavicornis Steph.

(Steph. Ill. Brit. V, 169; Ganglb. Käf. M. II, 374. - pronus Erichs. Käf. Mk. Br. I, 414; Gen. Spec. Staph. 285; Kraatz Ins. D. II, 465 (partly); Thoms. Skand. Col. III, 162; Rey Brévip. 1883, 271).

Fusiform, somewhat larger and broader than nanus, distinguished,

and easily identified by the short, very robust, and outwardly strongly thickened antennae.

Yellowish-red, strongly shining; posterior part of the head often, metasternum, and abdomen, with exception of posterior margins of the joints, always pitch-black or brown, elytra along the sides and around scutellum are also often dark; antennae are pitch-colored, their base, and the mouth-parts, also the legs reddish-yellow.

Antennae are short, and almost club-formly thickened outwardly, their third joint thinner and not longer than the second, the fourth feebly, the fifth more strongly, the following increasingly strongly transverse, so that the next-last become almost three times as broad as long. Pronotum is posteriorly as broad as elytra, anteriorly narrowing, without disciform punctures on sides; elytra only little, or scarcely longer than pronotum, with 5-7 punctures in the dorsal stripe, between this and the suture-stripe without punctures; the abdomen rather strongly tapering, rather strongly and densely punctate, the surface extremely finely transversally aciculate, and like the other species finely haired. L. 3.5 mm.

Distributed in Middle and North Europe, but here in Denmark rare and everywhere sparse, on damp forest-and marsh-ground under leaves and moss, also in alluvium.

9. M. forticornis Fauv.

(Fauv. Faun. gallo-rhén. III, 572; Rey Brévip. 1883, 268; Ganglb.

Käf. M. II, 374. - pronus var. a. Kraatz Ins. D. II, 465).

Very closely allied to clavicornis, but larger and broader, and with less robust antennae.

Yellowish-red, strongly shining; the sides of elytra, their base nearest scutellum, metasternum, and abdomen, with exception of posterior margins of the joints, black or pitchy-brown; the antennae dark, their base, and the legs reddish-yellow. Seldom is the head and middle-part of pronotum red-brownish.

The antennae are longer than in clavicornis, not strongly thickened outwardly, their third joint a little longer than the second, the fourth and fifth scarcely broader than long, the next-last feebly transverse; the abdominal surface, even when strongly magnified, entirely smooth, without transverse aciculation as in the preceding species, for the rest somewhat more robustly punctated than in it.

L. 4.5 mm.

Of this, in Middle Europe widely distributed, but very rare species (Ganglb.) I have found one specimen in the hills near Hvorup, north of N. Sundby; it is found in Finland, but not in Sweden. (Grill Cat. Col.).

2. Subgenus Ischnosoma Thoms.

10. M. splendidus Gravh.

(Gravh. Mon. 24; Erichs. Käf. Mk. Br. I, 416; Gen. Spec. Staph. 287; Kraatz Ins. D. II, 466; Thoms. Skand. Col. III, 165; Rey Brévip. 1883, 277; Ganglb. Käf. M. II, 368).

An elongate and narrowly fusiform species; in connection with the

form easily identified by the long, outwardly very feebly thickened antennae, and narrow head.

Reddish-yellow, strongly shining; the head or its posterior part, and often also its sides, meso- and metathorax,, also the abdomen, with exception of the posterior margins of the joints, pitch-black or pitch-brown; the elytra are darker yellow than pronotum, and frequently pitch-black or brown at base and along the sides; antennae brownish, their base and tip, also the legs yellow.

The head is longer than broad; the antennae considerably longer than head and pronotum together, very feebly thickened outwardly, their third joint almost twice as long as the second, the next-last as long as broad. Pronotum is posteriorly a little narrower than elytra, as long as broad, without disciform punctures on sides, together with the head specular-shiny; elytra amply $1/3$ longer than pronotum, with 5-7 punctures in the dorsal stripe, and without punctures between this and suture- or side-stripe; abdomen long tapering, with rather dense and fine punctation, rather fine and long hair, with many outstanding marginal- and side-bristles. L. 3.5-5 mm.

In the ♂ the fifth ventral abdominal joint broadly emarginate, the posterior margin with long and yellow hair, the sixth joint with deep incision in tip, and likewise with long yellow hair.

On damp forest- or meadow-ground under leaves and moss, or in alluvium; distributed in North and Middle Europe, and not rare here.

11. M. longicornis Mäkl.

(Mäklin Mycetop. Symb. 12; Kraatz Ins. D. II, 467; Thoms. Skand. Col. III, 166; Rey Brévip. 1883, 280; Ganglb. Käf. M. II, 368. - splendidus var. 2. Erichs. Gen. Spec. Staph. 287).

Very closely allied to splendidus, of which it possibly is a variety. It differs from this in the following characters:

It is ordinarily somewhat larger and broader, the color throughout lighter, as a rule the head is entirely reddish-yellow, as broad as long; the antennae longer and more robust, distinctly thickened outwardly; dorsal stripe of elytra has 7-9 punctures, and the abdomen with very scattered punctation. L. 4-5.5 mm.

In the ♂ the fifth ventral abdominal joint is slightly curved inward, and the sides of the curve provides with many long, stiff, black hairs, but its middle finely yellow-haired; the sixth joint is emarginate, and the margin yellow-haired.

On same sort of ground as the preceding species, but much rarer (Aalborg, Odense, Nykøbing F. several places in Sjaelland). Distributed throughout the greater part of North- and Middle Europe.

3. Group Staphylinini.

(Erichs. Käf. Mk. Br. I. 1837, 418; Gen. Spec. Staph. 290; Kraatz Ins. D. II, 468.- Staphylinina and Xantholinina Thoms. Skand. Col. II, 137, 183. - Staphyliniens and Xantholiniens Muls. et Rey Brévip. 1877, 67. - Staphylininae Ganglb. Käf. M. II, 375).

Prosternum back of fore-coxae is hidelike,^{*)} and its spiracula visibly exposed; antennae 11-jointed, inserted in front of eyes at fore-margin of the forehead.

Body elongate, more or less slender or robust; head more often porrect, and posteriorly nearly always constricted forming a neck; the antennae inserted at fore-margin of forehead in front of eyes inside of and above base of mandibles (Fig. 110. et. al.) 11-jointed, thickened outwardly or moniliform, rarely after a long first joint geniculate (Acylophorus); eyes occasionally very large (many species of Quedius), oftenest normal, rarely small; mandibles robust, pointed, often with teeth, when at rest folded crosswise; labrum oftenest emarginate or cleft in middle, more rarely whole; first joint of maxillary palpi small, the two middle ones stretched, distal joint formed differently; last joint of labial palpi feebly ax-formed (Fig. 113).

Pronotum varies in form, its overfolded side-margins either rather horizontal (Staphylinina and Xantholinina) or pressed entirely up to the dorsum (Quediina) and then entirely invisible from the side; prosternum occasionally (Xantholinina) anteriorly expanded into a movable plate, which covers the gula (gula-shield, gula-

^{*)} or membranous.

plate), otherwise as a rule evenly truncate. Back of the fore-coxae the sternum is hidelike, and its spiracula, when fore-coxae are bent upward, visible, occasionally (like in Quedius et.al.) touched, or half covered by one under the overturned side-margins of pronotum extending small plate, Operculum (Fig. 6 and 111). Elytra of about same length as metasternum, and as a rule scarcely covering the second joint of abdomen; scutellum always visible, often punctate and haired; the abdomen sometimes of almost even breadth, and again it may be posteriorly tapering, with marginate sides; it consists of 10 joints,^{*)} of which the ninth (the seventh exposed) as a rule in both sexes is divided into two styliform side-pieces, it is more rarely undivided (like in the ♀ of several Xantholinina).

The fore-coxae are tap- or peg-formed, and protruding, the tibiae often spiniferous, all tarsi, except of Tanygnathus, 5-jointed, the joints of the fore-tarsi frequently dilated, particularly in the ♂.

The larvae of several hereto pertaining genera are known, for instance of Heterothops, Velleius, Quedius, Creophilus, Staphylinus, Ocypus, Philonthus, Xantholinus, Leptacinus et. al., partly described and illustrated by J. Schiødte.

To this group, which us concerning includes about 130 species, belong the family's largest and most robust species; they are greedy, and distinctively predaceous animals, befitting their name of "Rove-beetles". - The group is arranged in three divisions.

^{*)} The author calls all segments joints, translator.

Key to Divisions.

1. Prosternum anteriorly dilated with a movable plate, which covers the gula (Fig. 121 a). The antennae inserted close to each other, oftenest farther from the eyes than the space between the antennae..... 3. Xantholinina.
- Prosternum not with gula plate. Antennae inserted farther from each other than from the eyes 2.
2. Side-pieces of pronotum (epipleura) strongly inflexed and deeply pressed against the underside of pronotum. The head ventrally on each side with a ridge-formed margin, which runs from the neck upward toward the corners of the mouth (Fig. 111 k). The constriction of the head posteriorly rather feeble, and the neck thick and short. Scutellum oftenest smooth 1. Quediina.
- The epipleura of pronotum almost horizontal. The head on ventral side without ridge-formed margins. The constriction of the head posteriorly rather strong and oftenest forming a neck. Scutellum always punctate and haired.....2. Staphylinina.

1. Division Quediina.

Prosternum anteriorly without gula plate. Pronotal epipleura deeply incurvate and pressed against the inner side of dorsum, therefore not visible from the side. The head ventrally on each side with a more or less sharp, ridge-formed margin, which run from the constriction upward toward the corners of the mouth. 1

The constricted part of the head, the neck, oftenest thick and short.

The scutellum most often smooth.

Key to Genera.

1. All tarsi 5-jointed..... 2.
 - Middle- and hind-tarsi 4-jointed, fore-tarsi alone 5-jointed..
..... 59. Tanygnathus Er.
2. Antennae after the very long first joint geniculate; the first joint as long as the following four joints together.....
..... 60. Acylophorus Nordm.
 - Antennae not geniculate, their first joint about as long as the following two joints together..... 3.
3. Fore-tarsi narrow, their single joints not dilated. The last joint of labial palpi triangular, axiformed....61. Euryporus Er.
 - Fore-tarsal three-four first joints more or less strongly dilated. Last joint of labial palpi tapering to a point..4.
4. Last joint of maxillary- palpi very small, much shorter and finer than the next-last, subulate.....62. Heterothops Steph.
 - Last joint of maxillary palpi as long as or longer than the next-last..... 5.
5. Antennal middle and next-last joints (4-10) serrately dilated
.....63. Velleius Mannh.
 - Antennal outer joints not dilated.....64. Quedius Leach.

59. Genus Tanygnathus Er.

(Erichs.Käf. Mk. Br. I, 417; Gen. Spec. Staph. 288; Kraatz Ins. D. II, 477; Thoms. Skand. Col. II, 182; Muls. et Rey Brévip. 1877, 693; Ganglb. Käf. M. II, 379).

The body is almost spool-shaped (broadly fusiform) and bears in size and form similarity with a Tachyporus; head small, only half as broad as pronotum, oval, (Page 342) posteriorly scarcely constricted; antennae thin and slender; maxillary palpi unusually elongate, their last three joints about of same length, distal joint filiformly tapering; the last joint of labial palpi shorter, and much finer than the next-last.

Pronotum posteriorly as broad as elytra, anteriorly narrowing, its corners rounded off, dorsum convex; elytra a little longer than pronotum, their posterior margin inside of the outer corners distinctly undated (rounded outwardly); abdomen strongly tapering; legs short, tibiae, particularly the middle ones finely spiniferous, fore-tarsi 5-jointed, the others 4-jointed, the hind-tarsal first joint about as long as the two following together, and longer than the distal joint.

In North and Middle Europe only 1 species is found, which lives at the edge of morasses and lakes, in water-moss, and under wet alluvium, often among roots of water-plants.

1. T. terminalis Er.

(Erichs. Käf. Mk. Br. I, 418; Gen. Spec. Staph. 288; Kraatz Ins. D. II, 478; Thoms. Skand. Col. II, 183; Muls. et Rey Brévip. 1877, 695; Ganglb. Käf. M. II, 380).

Black, shining, finely haired; pronotum pitch-brown with lighter margins; posterior margins of elytra, sometimes also the suture, the abdominal tip, and posterior margins of its joints reddish, first joint of the antennae, mouth-parts, and the legs reddish yellowish-brown.

The head is without punctation, and together with pronotum smooth, the antennal middle-and next-last joints at least twice as long as broad; pronotum shining smooth, with two impressed punctures on the disc in front of middle, and several outstanding bristles on the sides. Scutellum is finely punctate, rather large; elytra with dense scabrous punctation; abdomen very finely and densely punctate, color changeable, on sides and at tip endowed with numerous, outstanding bristles. L. 4 mm.

In the ♂ the first three joints of the fore-tarsi dilated (Kraatz, Ganglb.).

It has heretofore not been discovered here; but as it occurs both in Skaane and in North Germany, it is not improbable, that it also might be found in suitable localities in this country, most surely among roots of plants, and in water-moss at springs and morasses.

60. Genus Acylophorus Nordm.

(Nordm. Symb. ad Mon. Staph. 1837; Erichs. Käf. Mk. Br. I, 482; Gen. et Spec. Staph. 519; Kraatz Ins. D. II, 479; Thoms. Skand. Col. II, 181; Muls. et Rey Brévip. 1877, 687; Ganglb. Käf. M. II, 380).

The body is slender-fusiform; the head small, oval, posteriorly rather strongly constricted; temples and genae sharply marginate; the eyes oblong and flat; the forehead near inner margin of the eye with a large and a smaller bristle-bearing puncture; antennae rather long and slender, only feebly thickened outwardly, after the very long, scape-formed first joint geniculate, and the genus thereby easily identified.

Pronotum is posteriorly as broad as elytra, anteriorly narrowing, with rounded sides, corners, and posterior margins, its dorsum convex, with two pronounced punctures in front of middle, and a large bristle-bearing puncture above the side-margin anteriorly, otherwise smooth; elytra as long as pronotum, posteriorly they are together broadly obtuse-angularly undate^{*)}; the abdomen smoothly tapering; legs not long, the middle- and hind-tibiae spiniferous, tarsi 5-jointed, the fore-tarsal claw-joint robust, with long robust claws, and as long as the preceding four short joints together, the other first tarsal joints as long as the following three joints together.

To this genus belong two species, distributed in North and Middle Europe, and both are found in this country. They live at the edge of lakes, moors, and morasses in wet moss, particularly Sphagnum, between roots of water-plants and under alluvium.

Key to Species.

1. Legs black with reddish knees and tarsi. L. 6-7 mm.....
..... 1. A. glaberrimus Herbst.
- Legs reddish-brown. L. 7-9 mm..... 2. A. Tagenschieberi Kiesw.

1. A. glaberrimus Herbst.

(Herbst. Fuessly Arch. 1784, 5. Hft., 151; Ganglb. Käf. M. II, 381. - glabricollis Lac. Faun. Ent. I, 396; Erichs. Käf. Mk. Br. I, 482; Gen. Spec. Staph. 519; Kraatz Ins. D. II, Muls. et Rey Brévip. 1877, 690).

Not unlike Euryporus picipes, but considerably smaller and more slender, and easily identified by the antennae.

Black, shiny; head and pronotum specular-shining; elytra and the abdomen haired; posterior margin of the abdominal seventh ventral joint in living insects a lively red, in dead ones red-brownish; base of the first antennal joint, as well as knees of legs, and tarsi reddish.

With exception of the bristle-bearing punctures at inner margin of the eye, the head is dorsally smooth, but back of eyes finely punctate and finely haired, and with scattered outstanding bristles. The strongly geniculate first antennal joint is as long as the 4 or 5 following joints together, the third shorter than the second, the middle ones and next-last smoothly increasing, but rather feebly transverse. Pronotum is $\frac{1}{3}$ broader than long, rather strongly convex; the large bristle-bearing puncture of the side-margin stands a little above the marginal ridge. Scutellum is rather densely punctate, the middle impressed; elytra with dense and rather robust scabrose punctation; abdominal anterior joints at base rather densely, the rest sparsely punctate, the sides mainly toward tip with robust bristle-hairs. L. 6-7 mm.

Exceptionally rare; singly at water-edges here and there in Sjöland (Charlottenlund, Frederiksdal, Vejlsø Bugt (bend), April to July). Distributed in Middle Europe, but not found in Norway, Sweden, or Finland.

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2. A. Wagenschieberi Kiesw.

(Kiesw. Stett. Ent. Ztg. XI, 1850, 220; Kraatz Ins. D. II, 481; Thoms. Skand. Col. II, 182; Muls. et Rey Brévip. 1877, 692; Ganglb. Käf. M. II, 382).

It differs from the preceding species, to which it is closely allied, by the following characters:

It is oftenest somewhat larger; maxillary palpi, mouth, and legs are reddish-brown, the third antennal joint as long as the second; the bristle-bearing puncture on pronotal side-margin is close to the ridge; scutellum is flat, not impressed at middle; the abdomen with smoother, robust punctation, often with metallic changeable coloring. L. 7-9 mm.

Very rare in Middle Europe; here it has only been found at Lyngby Lake in wet alluvium (E. Wielandt, 5. 1902, 1 specimen); also found in Skaane (C. Roth).

Both this and the preceding species, as well as Tanygnathus terminalis, which all live in water moss (Sphagnum), and among roots of water plants, are on account of their hidden, partly under water, mode of living so rarely found as the case is. The best method for obtaining specimens would presumably be by pulling the moss and plants up and shake them over the sieve.

61. Genus Euryporus Er.

(Erichs. Käf. Mk. Br. I, 496; Gen. Spec. Staph. 553; Kraatz Ins. D. II, 481; Thoms. Skand. Col. II, 179; Muls. et Rey Brévip. 1877, 659; Ganglb. Käf. M. II, 382).

Body slightly convex, posteriorly feebly tapering; head proportionally small, only half as broad as pronotum, oval, posteriorly not strongly constricted, with sharp marginate temples and genae, large, oval, flat eyes, cleft labrum, and slender antennae, of which

the first joint is rather elongate; the last joint of maxillary palpi is feebly tapering, distal joint of labial palpi large and ax-formed.

Pronotum posteriorly at least as broad as elytra, anteriorly narrowing, with slightly rounded sides, and with rounded off posterior corners, and strongly rounded posterior margin; its dorsum convex, with several large punctures dorsally and on the sides, the entire periphery margined. Elytra scarcely longer than pronotum, their posterior margin broadly undate (rounded outwardly); abdomen posteriorly tapering a very little, its sides coarsely margined; legs rather short, all tibiae spiniferous, tarsi 5-jointed, fore-tarsal first joint as long as the claw-joint, and longer than the joints between, first joint of hind-tarsi longer than the following, fore-tarsi simple in both sexes.

To this genus only 1, in North and Middle Europe distributed species, which lives at water-edges in wet moss, and alluvium, and on damp forest ground under the plant cover.

1. E. picipes Payk.

(Payk. Faun. Suec. III, 426; Erichs. Käf. Mk. Br. I, 496; Gen. Spec. Staph. 554; Kraatz Ins. D. II, 482; Thoms. Skand. Col. II, 180; Muls. et Rey Brévip. 1877, 662; Ganglb. Käf. M. II, 383).

Black, head and pronotum shiny and naked; elytra and abdomen somewhat shining ad black-haired; abdomen oftenest with metallic changeable color; antennal base, and tip, also mouth, and mouth-parts yellow-reddish; tarsi and oftenest also the tibiae, or even the

knees brownish-red.

The head is shining smooth, though with three bristle-bearing punctures along inner margin of the eye, and a few back of the eye; first joint of the antennae as long as the two following together, the third longer than the second, the next-last scarcely transverse. Pronotum is posteriorly somewhat broader than elytra, with two anterior dorsal punctate rows with three punctures in each, outside of these several scattered side punctures, the rest without punctures and shiny. Scutellum is smooth; elytra oftenest a little shorter than pronotum, with robust and dense punctation; abdomen rather robust and densely punctate with somewhat elongate punctures. L. 9-10 mm.

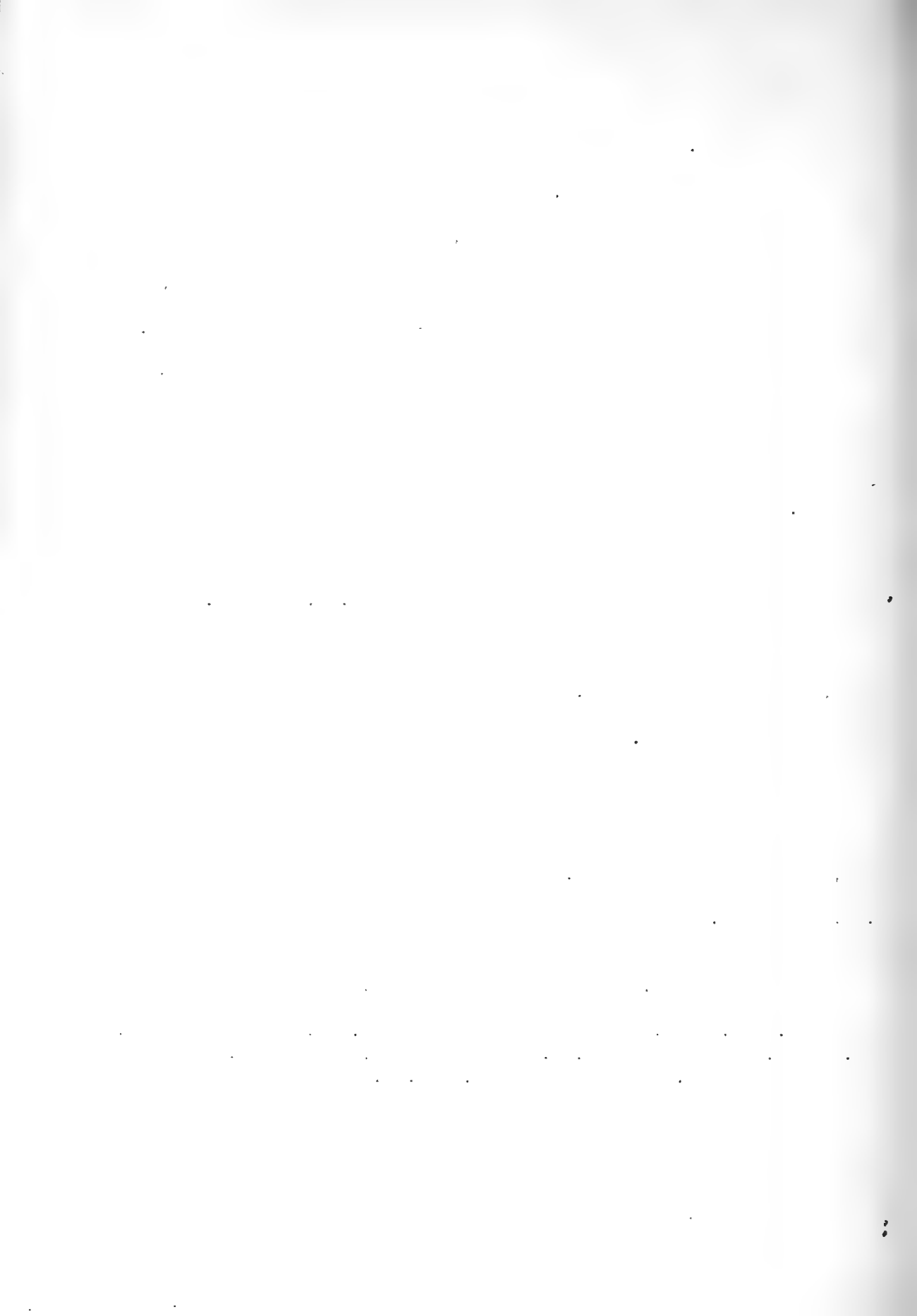
In the ♂ the sixth abdominal ventral joint curved inward posteriorly, in the ♀ rounded off. Last joint of maxillary palpi is more slender in ♀ than in ♂.

Distributed throughout the country, on damp forest- or marsh-ground, at the edge of water-holes and lakes, in moss and under foliage, but rare, or very rare. The larva is found and reared by Mr. E. Rosenberg.

62. Genus Heterothops Steph.

(Steph. Ill. Brit. V, 1832, 256; Erichs. Käf. Mk. Br. I, 480; Gen. Spec. Staph. 515; Kraatz Ins. D. II, 483; Thoms. Skand. Col. II, 180; Muls. et Rey Brévip. 1877, 664; Ganglb. Käf. M. II, 385).

Heterothops differs from the genus Quedius mainly in that, the last joint of maxillary palpi is fine as a needlepoint, much finer than the next-last. The body is slender and narrowly spool-formed*);



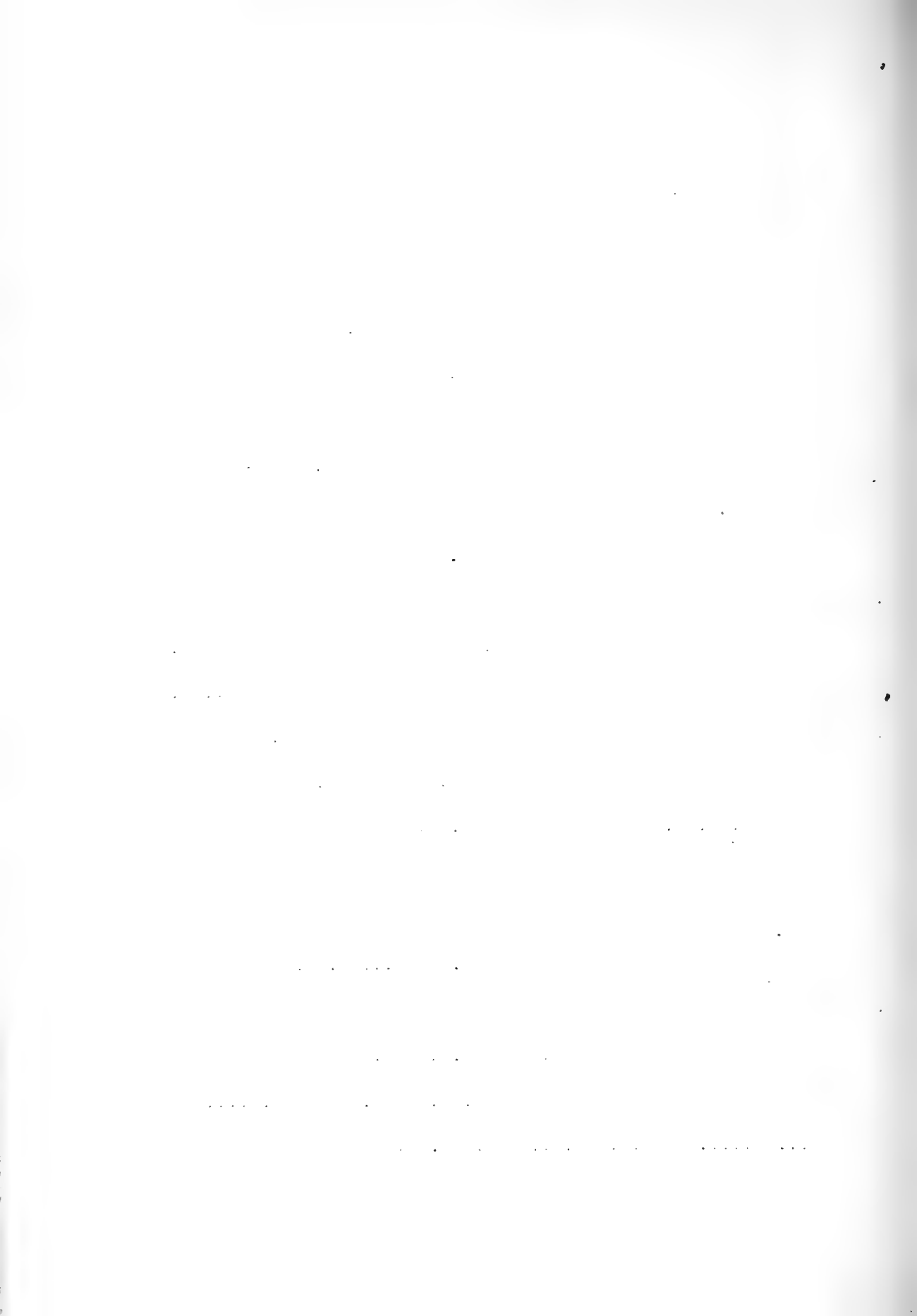
head small, short oval or narrow with rather small eyes, much narrower than pronotum, which at middle anteriorly bears a couple of distinct dorsal punctures. - In the ♂ the fore-tarsi are more strongly dilated than in the ♀, and the sixth abdominal ventral joint with a small angular incision in the posterior margin.

In this country 4 species are found, which are distributed in North and Middle Europe; some of these live particularly on damp ground, a few also occur in hollow trees, outhouses, mole-nests, and like places.

Key to Species.

1. Head short oval or rounded with very obtuse, yet distinct temple-corners 2.
- Head narrow oval with flat rounded off temple-corners.....3.
2. Antennae not longer than head and pronotum together. Elytra scarcely longer than pronotum. L. 4-5 mm.....
..... 1. H. praevia Er. with v. nigra Kr.

- Antennae longer than head and pronotum together. Elytra distinctly longer than pronotum. L. 5 mm... 2. H. binotata Gravh.
3. Antennal base reddish-yellow. Posterior margin of elytra brownish-red. L. 4-5 mm..... 3. H. dissimilis Gravh.
- Antennae and elytra entirely black. L. 4 mm.....
..... 4. H. quadripunctula Gravh.



1. H. praevia Er.

(Erichs. Käf. Mk. Br. I, Gen. Spec. Staph. 516; Kraatz Ins. D. II, 484; Muls. et Rey Brévip. 1877, 670; Janglb. Käf. M. II, 387.- nigra Kraatz Berl. Ent. Ztg. 1868, 352. - nidicola Thoms. Skand. Ins. I, 35).

Identified particularly by the form of the head, and the proportionately short antennae. It varies somewhat in color.

Black or pitch-black; head and pronotum shiny; elytra and abdomen finely haired and somewhat dull, silky shine; in the typical form elytra are brownish with reddish posterior margin, the tip, and posterior margin of the joints of abdomen brownish-red or brownish-yellow; antennal base, mouth, and legs brownish- or reddish-yellow; in v. nigra Kr. the elytra are black with brownish posterior margin, or entirely black, antennal base, mouth, and legs brownish-black or pitch-brown.

Body slender, narrowly fusiform; head short oval, with obtuse, yet distinct temple-corners, on each side inside of the eye with a row of four inserted punctures, otherwise smooth; antennae as long as or a little shorter than head and pronotum together, their third joint oftenest a little shorter than the second, the middle ones, and next-last, mainly 6-9, feebly transverse. Pronotum posteriorly as broad as elytra, a little broader than long, narrowing anteriorly, its dorsal side, except for a few bristle-bearing punctures on the dorsum and sides, without punctation, and with specular shine; scutellum finely punctate and haired; elytra scarcely or a very little longer than pronotum, with fine and dense punctation; abdomen tapering,

with very fine and dense punctation. L. 4-5 mm.

It lives particularly in dark places in buildings: cellars, barns, and outhouses, in waste, also in hollow trees, distributed, but rare. The form nigra Kr. occurs frequently in mole's nests, humblebee's nests, and like places; its larva is reared by Mr. E. Rosenberg.

2. H. binotata Gravh.

(Gravh. Micr. 28; Erichs. Gen. Spec. Staph. 516; Kraatz Ins. D. II, 485; Muls. et Rey Brévip. 1877, 667; Ganglb. Käf. M. II, 387).

Ordinarily a little larger than praevia, from which it otherwise differ mainly by the longer antennae, and longer elytra.

Black; head and pronotum shiny; elytra and the abdomen finely haired, with a rather feeble, somewhat silky shine; posterior margin of elytra, tip of abdomen, oftenest also posterior margins of its joints, antennal base, mouth, and the legs brownish or reddish yellow.

Head is of same form as that of praevia with distinct temple-corners, and also similar punctation of pronotum. Antennae are longer

(Page 347)

than head and pronotum together, their third joint longer than or as long as the second, the middle ones longer than broad, the next-last not transverse. Pronotum is as long as broad, anteriorly rather strongly narrowing; elytra oftenest distinctly longer than pronotum, and together with scutellum, and abdomen with rather fine and dense, somewhat more robust punctation than that of praevia. L. 5 mm.

It lives mainly on the shore under sea-weed, and other alluvium, and is probably distributed everywhere along our coasts, however heretofore only found a few places (Frederikshavn, Thisted, Asnaes, Refsnaes, and Tisvilde). It is found at the Norwegian, but not at the Swedish coasts.

3. H. dissimilis Gravh.

(Gravh. Micr. 125; Erichs. Käf. Mk. Br. I, 480; Gen. Spec. Staph. 517; Kraatz Ins. D. II, 485; Thoms. Skand. Col. II, 181; Muls. et Rey Brévip. 1877, 679; Ganglb. Käf. M. II, 388).

Identified particularly by the unusual narrow, oblong form of the head, and by the short elytra.

Black or pitch-black; head and pronotum with specular shine; elytra and abdomen with fine and sparse, rather long hair, glistening; pronotum often brownish; the elytral posterior margin reddish or brownish yellow; tip of abdomen and often also posterior margins of its joints reddish-brown; antennal base, mouth, and legs reddish-yellow.

It is oftenest smaller and narrower than the two preceding species. It is easily distinguished from praevia, which it most resembles, but also from binotata, in that the head is very narrowly oval with flat rounded off, not noticeable temple-corners; antennae are rather short, their middle and next-last joints of even breadth, and not broader than long; elytra are short, oftenest hardly as long as pronotum, and as well as abdomen with rather fine and dense punctation. The abdomen not silky glistening. L. 4-4.5 mm.

On woodland ground under leaves and fagot, at the root of old

trees, also in alluvium, and occasionally in mounds with Formica rufa. Distributed in North and Middle Europe, rare in Denmark, and somewhat local (Dyrehaven, Hillerød, Tisvilde, Nykøbing F., Gedser).

4. H. quadripunctula Gravh.

(Gravh. Mon. 24; Erichs. Käf. Mk. Br. I, 481; Gen. Spec. Staph. 517; Kraatz Ins. D. II, 486; Thoms. Skand. Col. II, 181; Muls. et Rey Brévip. 1877, 685; Ganglb. Käf. M. II, 388).

Oftenest a little smaller than dissimilis and praevious v. nigra, distinguishable by the color, and the form of the head.

Black, head and pronotum shiny, elytra and abdomen finely haired, glistening; the antennae entirely black, legs pitch-brown or reddish-brown,

The head is oval without indication of temple -corners; the antennal third joint shorter than the second, the following of even breadth, the next-last as long as broad; -----(Page 348)----- elytra hardly longer than pronotum, with rather dense and robust punctation; abdomen with fine and dense punctation. L. 4 mm.

Distributed in North and Middle Europe; not rare here in alluvium at lakes and on damp meadow-ground; at times in very great numbers (alluvium at Limfjorden, Aalborg 10. 1890 author).

63. Genus Velleius Mannh.

(Mannerh. Brach. 1830, 16; Thoms. Skand. Col. II, 172; Muls. et Rey Brévip. 1877, 464; Ganglb. Käf. M. II, 388).

This genus differ from Quedius mainly in that the antennal joints from the fourth to the tenth, at the inner side are serrately dilated.

The only European species of this genus, which is also found here, lives and completes its entire development in the nest of the large wasp Vespa crabro, which mostly occur in woodland regions, and oftenest builds in old, hollow trees.

1. V. dilatatus Fabr.

(Fabr. Mant. Ins. I, 220; Erichs. Käf. Mk. Br. I, 484; Gen. Spec. Staph. 524; Kraatz Ins. D. II, 490; Thoms. Skand Col. II, 172; Muls. et Rey Brévip. 1877, 466; Ganglb. Käf. M. II, 390)

Black, feeble or dull shine; elytra and abdomen with short, black hair, pronotum and the abdomen of finely metallic and silky changeable color; distal joint of antennae reddish-yellow.

Body large, broad and robust; the head much narrower than pronotum, with thick neck, especially fine and not dense punctation, the surface extremely finely reticulate; antennae short and robust, their middle- and next-last joints from the fourth to the tenth serrately dilated, distal joint small. Pronotum is broader than elytra, much broader than long, posterior margin and sides rounded so they form one arch, dorsum convex at middle, posteriorly and at sides broadly depressed, at middle anteriorly with few, dorsal punctures arranged in pairs, along the margins with several bristle-bearing punctures, the surface with especially fine, scattered punctation, and extremely finely reticulate. Elytra a little longer than pronotum, very densely and finely punctate, dull; the abdomen tapering posteriorly, with less dense and fine punctation than elytra. L. 15-24 mm.

In the ♂ the fore-tarsi are more strongly dilated than in ♀.

and posterior margin of the abdominal sixth ventral joint feebly curved inwardly.

It is distributed with the host wasp, Vespa crabro, in who's nest it sometimes occur in considerable numbers; but as the wasp often builds its nest inapproachably high in hollow trees, particularly oak, and is feared on account of its severe, poisonous sting, the staphylinid is not easily apprehended. Formerly it was here taken singly in North-sjaelland and Lolland outside of the wasp nest or partly reared by larva from this. More recently it was on one occasion taken in numbers in Hvedholm Dyrehave at Faaborg (Aug. 1901, superintendant of schools Jørgensen, Odense)--(Page 349)---as they gradually came out of the nest, or came flying to it. - The larva lives in the wasp's nest mainly of all sorts of waste; they winter in the nest, and in the crumblings of the tree, and pupate there. As mature beetle Velleius is living of the wasp's gathered provisions, and of outflowing tree-sap; it favours honey and sugar. It makes itself useful in the nest by protecting it from other, dangerous parasites, namely large scolopendred, which it attacks and tears to pieces with ferocious fury. When alive it smells strongly of musk.

64. Genus Quedius Steph.

(Steph. Ill. Brit. Ent. V. 1832, 214; Erichs. Käf. Mk. Br. I, 483; Gen. Spec. Staph. 523; Kraatz Ins. D. II, 486; Muls. et Rey Brévip. 1877, 469; Ganglb. Käf. M. II, 391. - Thoms. Skand. Col. II: Quedius + Microsaurus + Raphirus hhv. 173, 174, 177).

A genus composed of numerous species with stretched, fusiform body (Fig.110). The head is rounded or ovate with thick or rather

thick and short neck, sharp and oftenest entirely margined temples and genae, the eyes which are placed on sides are rather large, or very large, rarely small, labrum most often cleft. Dorsal side of head with several rather large bristle-bearing punctures, the number and position of which often furnish important characters of species. The large posterior puncture on forehead is of particular importance, it is situated between inner posterior margin of the eye and constriction of the neck; back of this nearest the constriction-groove are several punctures on the vertex, farther to the side, back of the eye are several punctures on temple, and anteriorly on forehead at inner margin of the eye oftenest several punctures, of which the foremost is called first forehead puncture. Antennae not long, occasionally slightly thickened outwardly, their third joint oftenest longer than the second. Last joint of maxillary palpi smoothly tapering, only a little narrower than the next-last, and distinctly longer than this.

Fig. 110. Quedius mesomelinus Marsh. a: First, b: last large bristle-bearing puncture of the forehead. c: Vertex punctures. d: Dorsal punctures of pronotum. e: Side-marginal large bristle-bearing puncture.

Pronotum is broad, often broader than elytra, with rounded, finely marginate sides and posterior margin, and strongly deflected anterior corners, dorsum convex, as a rule provided with three (exceptionally with only one or four) pairs of larger punctures on the dorsum anteriorly, arranged behind each other in such manner that it forms two short punctate rows, near side-margin and before middle of

this, the large side-marginal bristle-bearing puncture is found, and on the anterior side-surface often several scattered or row-formed punctures. On ventral side of prosternum (Fig. 111) the pronotal sharply deflected epipleura are pressed close against the dorsum, and not visible from the side; --- (Page 350) ---- the spiracula are more or less covered by a small, oftenest chitinized plate, operculum (the not fully developed epimera), which appears from under the side-margin. Elytra are about of same length as pronotum; abdomen more or less tapering; the legs rather short, all tarsi 5-jointed, fore-tarsi more or less dilated, middle- and hind-tibiae finely spiniferous.

In Middle Europe at least 60 species are known; about half in number of these have so far been found in Denmark. The majority of these live on damp ground under foliage, and in alluvium, others in fungi, plant fertilizer,*) hollow trees and like places; a few species are myrmecophile, or live in humble-bee's and mole's nests. According to size of eyes, and form of labrum are they divided into several subgenera.

Key to Subgenera and Species.

1. Eyes shorter or very little longer than temples. Labrum emarginate or cleft at middle..... 2.
- Eyes at least twice as long as temples..... 3.
2. Eyes very small, only half as long as the very long temples: 1.
subgenus Ediquus Muls. et Rey.....5.
- Eyes as long as - or very little shorter or longer than temples: 2. subgenus Microsaurus Thoms.....6.

*)compost.

3. Labrum entire, flat rounded. Body elongate, smoothly convex, and rather even breadth: 3. subgenus Quedius s. str. Thoms.....20.
- Labrum cleft or emarginate at middle. Abdomen tapering..... 4.
4. Eyes twice as long as temples: 4. subgenus Sauridus Muls. et Rey..... 22.
- Eyes so large that they almost occupy the entire sides of the head; the temples therefore very short: 5. subgenus Raphirus Steph.31.
5. Scutellum simple punctate. l. 5 mm.....1. Q. microps Gravh.
- Scutellum not punctate. l. 9-10 mm.....2. Q. longicornis Kr.
6. Elytra with two or three longitudinal rows of larger punctures (subgenus Quedionuchus Sharp.)..... 19.
- Elytra without such punctate rows..... 7.
7. Scutellum with scattered punctation.....18.
- Scutellum without punctation, smooth..... 8.
8. Pronotum anteriorly on each side of middle line with a punctate row (dorsum row) consisting of three, rarely four punctures.:9.
- Pronotum anteriorly at most with only two punctures in each dorsal row, the first close to the fore margin, the other, if it is not erased, farther back. l. 6-7 mm... 3. Q. brevis Er.
9. Pronotum with four punctures in each dorsal row. l. 7-8 mm. 14. Q. tenellus Gravh.

Fig. 111. Head and prosternum of Quedius mesomelinus Marsh. seen from ventral side. One leg removed. k: Margin (or ridge) of temples and genae. eppl: Inflexed sidemargin of pronotum. op: Operculum. stigm. Prosternal spiracle.

- Pronotum with three punctures in each dorsal row..... 10.
- 10. Antennal next-last 4-5 joints at least as long as broad.
Elytra black with yellow side-margin. L. 10-12 mm.....
.....4. Q. lateralis Gravh.
- Antennal next-last 4-5 joints more or less transverse..... 11.
- 11. Pronotal sides outside of the dorsal punctate row with a row
of 3-5 punctures, of which the last is set farther back
than the large, bristle-bearing puncture of side-margin.:12.
- Pronotal sides outside of dorsal punctate row with only a few
punctures close to the fore-margin, of which none are as far
back as the large, bristle-bearing puncture of side-margin.:14.
- 12. Antennal base black. Elytra as a rule red, rarely bluish-black
or black..... 13.
- Antennal base reddish-yellow. Elytra oftenest red, occasionally
black with reddish suture. L. 8-10 mm...5. Q. cruentus Oliv.
- 13. Head outside of and a little in front of the last large punc-
ture of fore-head with one, oftenest rather large puncture
close to inner posterior margin of the eye. L. 8-11 mm.: a.
Elytra yellowish-red: 7. Q. ochripennis Men., or bluish-black:
..... ochrip. var. nigrocoeruleus Fauv.
- b. Elytra brownish-red. Eyes proportionately small, shorter than
temples.....8. Q. othiniensis nov. spec.
- Head not with puncture between the last large puncture of fore-
head ant the eye. L. 8-10 mm..... 6. Q. fulgidus Fabr.
- 14. Antennal base and the legs black or blackish-brown..... 15.

- Antennae or their base only, also legs reddish-yellow 17.
- 15. The head's large, posterior^{*)} forehead-puncture set right in middle between the eye and constriction-groove of the neck.
Elytra red. Posterior femora on ventral side finely spiniferous. L. 9-11 mm.....10. Q. brevicornis Thoms.
- The head's large, hindmost forehead-puncture set closer to the eye than the constriction-groove of the neck. Elytra black or brownish-black.....16.
- 16. Elytra rather densely punctate. L. 9-11 mm..11. Q. mesomelinus Marsh.
- Elytra with rather scattered punctation. The species smaller.
L. 7-9 mm.....12. Q. maurus Sahlb.
- 17. Elytra pitch-black or pitch-brownish. Antennae pitch-brown with reddish-yellow base. L. 7-9 mm.....13. Q. xanthopus Er.
- Elytra reddish-brown, oftenest with darker outer posterior corners. Antennae reddish-yellow. L. 6-8 mm.....
.....15. Q. scitus Gravh.
- 18. Elytra black or pitch-black. Abdomen reddish-brown. L. 8-10 mm.
.....9. Q. ventralis Arag.
- Elytra brownish-yellow, at middle pitch-brown. Abdomen pitch-black with margins of the joints lighter. L. 5 mm.....
.....16. Q. infuscatus Er.
- 19. Elytra distinctly punctate, also with three rows of rather large punctures. L. 7-9 mm.....17. Q. cinctus Payk.
- Elytra without ground punctation, with only two feeble punctate rows, each with few punctures. L. 7-8 mm.....
.....18. Q. laevigatus Hyllh.

*)hindmost.

20. Scutellum without punctation, smooth. L. 10-12 mm.....
- 19. Q. fuliginosus Gravh.
- Scutellum punctate, haired..... 21.
21. Forehead anteriorly between eyes with a transversal row of
- 6-8 punctures. L. 10-12 mm..... 20. Q. tristis Gravh.
- Forehead anteriorly without transversal punctate row, with
- only one large bristle-bearing puncture at inner margin of
- the eyes. L. 9-10 mm.....21. Q. molochinus Gravh.
22. Head anteriorly on the forehead with a transversal row of
- 4 punctures.....30.
- Head anteriorly without transversal punctate rows, with only
- the usual large bristle-bearing punctures on each side at
- inner margin of the eye.....23.
23. Hind tarsal first joint distinctly longer than claw-joint..24.
- Hind tarsal first joint only as long as- or shorter than the
- claw-joint.....25.
24. Head and pronotum black; elytra red. L. 9-10 mm..22. Q. picipes Mannh.
- Head black, pronotum and elytra yellowish-red or brownish at
- middle. L. 7-8.5 mm..... 23. Q. nigriceps Kr.
25. Elytra with smooth surface between punctures, shining.....26.
- Elytral surface very finely shagreened between punctures, and
- therefore of somewhat dull shine. L. 7-9 mm.....
-24. Q. fumatus Steph.
25. Pronotum broader than elytra; these with coarse and not dense
- punctation. L. 6-7 mm25. Q. umbrinus Er.

- Pronotum not broader than elytra, which are rather finely punctate.....27.
- 27. Elytra distinctly a little shorter than pronotum, black or brownish-black, suture, sides, and the distal posterior margin reddish or brownish-yellow. L. 6-7 mm.....
.....26. Q. limbatus Heer.
- Elytra as long as pronotum..... 28.
- 28. Elytra blackish-brown or brown, only the posterior margin narrowly reddish-yellow. L. 7-7.5 mm...27. Q. maurorufus Gravh.
- Elytra pitch-black or pitch-brown, with a large reddish-yellow or reddish spot on the humerus, reddish-yellow or reddish sides, suture, and posterior margin.....29.
- 29. Antennal third joint considerably longer than the second. L. 7-8 mm..... 28. Q. humeralis Steph.
- Antennal third joint scarcely longer than the second. L. 6-7 mm..... 29. Q. obliteratus Er.
- 30. Elytra with rather robust and not dense punctation. Abdomen pitch-black. L. 5-6 mm.....30. Q. scintillans Gravh.
- Elytra with rather fine and dense punctation. Abdomen brown. L. 5-6 mm. 31. Q. lucidulus Er.
- 31. Scutellum without punctation and smooth. Abdominal joints on sides with golden-yellow hair-spots. L. 4.5-5 mm.....
..... 32. Q. auricomus Kiesw.
- Scutellum with punctation..... 32.

32. Antennal third joint distinctly longer than the second; posterior tarsal first joint longer than claw-joint. L. 7.5-9 mm.

.....33. Q. rufipes Gravh.

- Antennal third joint scarcely longer than the second; posterior tarsal first joint not longer than claw-joint..... 33.

33. Head oval. Abdomen especially fine and densely punctate. Body fusiform. L. 5-6 mm..... 34. Q. picipennis Heer.

- Head transversally rounded. Abdomen less densely punctate.

Body of rather even breadth. L. 4-5 mm...35. Q. boops Gravh.

1. Subgenus Ediquus Muls et Rey.

1. Q. microps Gravh.

(Gravh. Stett. Ent. Ztg. 1847, 213; Thoms. Skand. Col. IX, 166; Muls et Rey Brévip. 1877, 474; Ganglb. Käf. M. II, 396. - chrysurus Kiesw., Kraatz Ins. D. II, 520)

One of our smaller species, identified by the very small eyes, and simple punctation of scutellum.

Pitch-brown; head and pronotum shiny; elytra and abdomen finely haired, shiny (or glistening); head black or pitch-black; elytra often reddish-brownish; tip of the abdomen and the posterior margins of its joints yellow-brownish; antennae brown, base of these, and the legs lighter, brownish-red.

Head oval; eyes very small; temples long and smooth; antennae short, their next-last joint transverse. pronotum scarcely broader than elytra, as long as broad, with two punctate rows, each with three punctures, anteriorly on the dorsum, and with a peculiar, silky, changeable lustre, due to the extremely fine transversally-

aciculate surface (background). Scutellum with a few fine punctures, about five or six. Elytra as long as pronotum, rather fine and not densely punctate; abdomen smoothly tapering, with fine and rather dense punctation. L. 5 mm.

In the ♂ the sixth abdominal ventral joint with broad and rather deep emargination at tip.

It lives in crumblings of old hollow trees, often in company with ~~with~~ the black ant. Lasius fuliginosus, is distributed in Middle and North Europe, but in this country it is rare, or very rare (Skørping Forest south of Aalborg, Randers, Bognaes, Dyrehaven at Copenhagen, and several other places).

2. Q. longicornis Kr.

(Kraatz Ins. D. II, 494; Thoms. Skand. Col. IX, 165; Muls. et Rey Brévip. 1877, 472; Ganglb. Käf. L. II, 396).

Rather stretched, and of even breadth, identifiable especially by the very small eyes and by the slender antennae.

Reddish-brown or pitch-brown; head and pronotum with dull shine; elytra and the abdomen finely haired, glistening; the head pitch-black; pronotum pitch-brown with lighter sides; elytra brownish-red; tip of abdomen and posterior margin of its joints yellowish brownish-red; antennae, mouthparts, and legs reddish or yellowish brown.

Head as long as broad, with small eyes, only half as long as the long, rather erect, finely punctate temples; antennae slender and rather long, their middle and next-last joints as long as broad.

Pronotum is broader than elytra, broader than long, anteriorly scarcely narrowing, depressed at sides, with rather fine dorsal- and marginal punctures, and few or no side punctures, ground-surface as well as head finely reticulated, and therefore with dulled shine; elytra scarcely longer than pronotum, with rather fine and dense, and somewhat more distinct punctation than the abdomen, which is of almost even breadth. L. 9-10 mm.

In the ♂ the fore-tarsi are more strongly dilated than in the ♀, and posterior margin of abdominal sixth ventral joint is slightly emarginate at middle.

Particularly in woodland regions, but rare; oftenest found in nests of wasps and mice, also in hollow trees, under loose bark on tree-trunks and like places, more rarely in mole's nests.

2. Subgenus Microsaurus Thoms.

3. Q. brevis Er.

(Erichs. Gen. Spec. Staph. 535; Kraatz Ins. D. II, 500; Thoms. Skand. Col. II, 177; Muls. et Rey Brévip. 1877, 481; Banglb. Käf. M. II, 397).

A feebly fusiform, myrmecophil species, with only 1-2 punctures in each of the doreal rows of pronotum, and easily identified by this.

Pitch-black, shining; elytra and pronotum finely haired; pronotum and the abdomen often pitch-brown; elytra, posterior margins of the abdominal joints, mouth, antennae, and legs brownish-red.

The head and pronotum are shiny, and except for a few, single bristle-bearing punctures with long, bristling hairs, smooth and naked; head rounded, with rather small eyes, and rather short an-

tennae, of which the distal joint is distinctly transverse; the hindmost bristle-bearing puncture of the forehead is set peculiarly far back, closely in front of the head's constriction.

Pronotum is broader than elytra, distinctly broader than long, with slightly rounded sides, convex, depressed at sides, the dorsal row with only 1-2 punctures, one at anterior margin, and an other farther back in front of middle, which however occasionally is wanting; pronotal side-plane with only a few punctures at the margin. Elytra is not longer than pronotum, with rather robust, but not dense punctation; abdomen tapering, fine, and rather densely punctate. L. 6-7 mm.

In the ♂ the sixth ventral abdominal joint with obtuse angular incision at tip, and smoothened before the incision.

It lives in the mounds with Formica rufa and with Lasius fuliginosus on prey. It is treated as an enemy by the ants, which attack, and if possible kill it; but it ordinarily manages with agility to wind its way through the swarm of ants, and hide itself in the loose mould of the mound. From such a hiding place it attacks, mostly at night, single roaming ants. - It is distributed with the said host-ants. in North and Middle Europe, and not rare in Denmark.

4. Q. lateralis Gravh.

(Gravh. Micr. 35; Erichs. Käf. Mk. Br. I, 485; Gen. Spec. Staph. 525; Kraatz Ins. D. II, 491; Thoms. Skand. Col. II, 174; Muls. et Rey Brévip. 1877, 487; Ganglb. Käf. M. II, 397).

One of our largest species, rather broad and robust, with proportionately slender antennae, otherwise easily identified by the yellow side-margin of the black elytra.

Black, head and pronotum specular shining; elytra with dull shine, as well as the abdomen with fine, black hair, the latter often with greatly changeable color; the deflexed side-margin of elytra reddish-yellow; posterior margins of abdominal joints occasionally brownish; antennae brown, their first joints, and mouth-parts yellowish-red; the legs dark-brown with somewhat lighter tibiae and tarsi.

The head rounded; the hindmost large puncture of the forehead is placed close to posterior margin of the eye; antennal outer joints as long as broad; pronotum broader than elytra, depressed at sides, with three punctures in each dorsal row, and scattered punctures on side-planes; elytra as long as pronotum, with fine and rather dense punctation, ground-surface extremely finely shagreened, and therefore more or less dully shining; abdomen narrowing toward the tip, punctation like that of elytra. L. 10-12 mm.

In the ♂ the abdominal fifth ventral joint with a very small, the sixth with a deep triangular incision at tip, which is continued forwardly by a cuneiform, smooth groove.

In Denmark not rare in the autumn, at decaying fungi; mainly in woodland regions; distributed in Europe.

5. Q. cruentus Oliv.

(Oliv. Entom. III, 42; Erichs. Gen. Spec. Staph. 527; Kraatz Ins. D. II, 495; Thoms. Skand. Col. IX, 162; Muls. et Rey Brévip. 1877, 517; Ganglb. Käf. M. II, 399).

Closely allied to Q. fulgidus, identified particularly by the position of the side-punctures of pronotum, also by the reddish-yellow antennal base, and abdominal tip.

Black, shining; head and pronotum shiny^{*)}; elytra and abdomen finely haired; elytra red, more rarely black or brown with the suture red (v. virens Fottenb.), abdominal tip broadly, and posterior margins of the other abdominal joints narrowly reddish-yellow; antennae pitch-red, their base, mouth-parts, and the legs reddish-yellow or yellowish-red.

The head is rounded; the hindmost, large bristle-bearing puncture of forehead placed somewhat closer to the eye than to the constriction of the head. Antennae robust, their next-last five joints strongly transverse. Pronotum is fully as broad as elytra, and not or only feebly depressed on sides; outside the dorsal punctate row the sides bear a longitudinal row of three or four punctures, of which the hindmost is placed farther back than the large bristle-bearing puncture of the side-margin; elytra are fully as long as pronotum, rather finely and not densely punctate; abdomen slightly tapering, with fine and dense punctation. L. 8-10 mm.

In the ♂ the abdominal sixth ventral joint smoothed and emarginate.

Distributed in Europe, and not rare in our woodland regions, in hollow trees, plant-fertilizer, and at fungi; v. virens is rare.

6. Q. fulgidus Fabr.

(Fabr. Mant. Ins. I, 220; Erichs. Käf. Mk. Br. I, 486; Gen. Spec. Staph. 525, partly; Kraatz Ins. D. II, 492, partly; Muls. et Rey Brévip. 1877, 513; Ganglb. Käf. M. II, 399. - quadripunctatus Thoms. Skand. Col. IX, 159).

Among closely allied species with red elytra particularly distinguishable by the black base of antennae, also by the number and position of pronotal side-punctures.

Black, glistening; head and pronotum with specular shine; elytra and abdomen finely haired; elytra red, very rarely black (v. depau-peratus Woll.), posterior margins of abdominal next-last joints occasionally reddish-brownish; antennal first three joints black, the outer joints and legs dark- or black-brownish.

The head is rounded, ground-surface with extremely fine, scattered punctation, with more distinctly punctate temples; the hindmost large bristle-bearing puncture of forehead is closer to the eye than to the constriction of the head. The antennae are less robust than in cruentus, and the next-last joints not strongly transverse. Pronotum is as broad as - or a little broader than elytra, broader than long, slightly depressed on sides, and outside of the usual dorsal punctate rows with a somewhat irregular or curved punctate side-row, consisting of 3-5 punctures, of which the hindmost is set farther back than the large bristle-bearing puncture of side-margin. Elytra are fully as long as pronotum, rather robust, but not densely punctate; abdomen tapering slightly, with fine and rather dense punctation. L. 9-12 mm.

In the ♂ the abdominal sixth ventral joint smoothened and broadly emarginate at tip.

In cellars, outhouses, hollow trees, and plant-fertilizer; distributed in Europe, but is rare everywhere in this country.

7. Q. ochripennis Men.

(Menetrier Cat. rais. 1832, 145; Muls. et Rey Brévip. 1877, 507; Ganglb. Käf. M. II, 398. - variabilis Gyllh. Ins. Suec. II, 303. - puncticollis Thoms. Skand Col. IX, 164).

Very closely allied to, and of appearance nearly like that of fulgidus, from which it mainly differs by a small bristle-bearing puncture close into the posterior margin of the eye, and by the more unicolorous black of the abdomen.

Black, glistening; head and pronotum shiny; elytra and abdomen finely haired; elytra yellowish-red, rarely bluish-black (var. nigrocoeruleus Fauv., variabilis Muls, et Rey) mouth-parts, antennae, and legs pitch-black or pitch-brown, the fore-tibiae and tarsi oftenest reddish-brown.

The head is oval, or (in ♂) roundedly transverse, larger of ♂ than of ♀, with extremely fine and feeble, scattered punctation, as well as pronotum with especially fine undulated transversal aciculation; temples fully as long as eyes, with a large bristle-bearing puncture closer to the constriction of the neck than to the eye; the hindmost large bristle-bearing puncture of the forehead is a little closer to the eye than to the constriction of the neck, and obliquely outside of this, close into the posterior margin of the eye a small

ler, bristle-bearing puncture is found, which sometimes is very fine, but always present however. The antennae are rather robust, their next-last five joints not strongly transverse. Pronotum is fully as broad as elytra, smoothly convex with sides only slightly impressed, and outside of dorsal punctate rows, on the side-planes with an obliquely placed punctate row, consisting of 3-4 punctures, of which the hindmost is placed farther back than the large, bristle-bearing puncture of the side-margin, it is sometimes indistinct. Elytra are a little longer than pronotum, rather finely and not densely punctate; the abdomen with very fine and feeble, rather scattered punctation. L. 8-10 mm.

In the ♂ the abdominal sixth ventral joint's posterior margin is at middle smoothened and rather broadly emarginate.

Distributed throughout Europe; here it is rare or very rare; it occurs in wasp's and humblebee's nests, in hollow trees and in mole's nests (Restrup Forest at Aalborg, Taps at Kolding, Dyrehaven and several other places in North-Sjælland); var. nigrocoeruleus is found here and there in N.-Sjælland in mole's nests. It is considered by Mulsant et Rey et. al. as a distinct species.

8. Q. othiniensis nov. spec.

(Joh. Entom. Meddel. 1907, 171. - talparum Deville 1910. - Heidenreichi Bernh. Münch. Koleopt. Ztg. 1910).

Very closely allied to Q. ochripennis and like this with an always present, fine bristle-bearing puncture at inner posterior margin of the eye. The differing characters of the two species are not

always distinctive, and the correct determination therefore often difficult.

Black, glistening; head and pronotum shiny; elytra and abdomen finely haired; elytra brownish-red, rarely as light as in ochripennis; maxillary palpi, fore-tibiae, and tarsi as a rule reddish-brown.

The body is rather elongate, and of even breadth, of more even breadth than that of ochripennis, and form of the head less transverse, sculpture, and position of the bristle-bearing punctures of head and pronotum, mainly the same as of this, however the hindmost, large, bristle-bearing puncture of forehead, is frequently double, and the smaller bristle-bearing puncture at posterior margin of the eye often particularly fine, rarely double; temples are distinctly longer than eyes, especially in the ♂; antennae rather robust, somewhat shorter and more robust than in ochripennis, their next-last five joints rather strongly transverse. Pronotum is posteriorly oftenest distinctly impressed on sides, and the form therefore less plumply or broadly convex than that of ochripennis, the hindmost punctures in the punctate row on the side-planes often indistinct. Elytra is not longer than pronotum, a little shorter, and together proportionately narrower than in ochripennis, punctuation same as in this. Abdomen rather elongated, and of more even breadth than of the preceding species, a little more densely and sharply punctate. L. 9-11 mm.

In the ♂ the head is considerably broader and larger than in ♀.

and posterior margin of abdominal sixth ventral joint smoothened and emarginated like in ochripennis.

It lives and develops in mole's nests, and is seemingly not rare. After one single specimen (♂) had first been found near Odense (6. 1899 N. P. Jørgensen) it has later been found in numbers in different places in Nordsjaelland as well as at Silkeborg; the larva is found in the mole's nests and reared by Mr. E. Rosenberg. The species is presumably widely distributed in Europe, and similar to the later described talparum Deville and Q. Heidenreichi Bernh.

9. Q. ventralis Arag.

(Arag. Col. Ital. 1830; Muls. et Rey Brévip. 1877, 484; Ganglb. Käf. M. II, 399. - fulgidus var. 3 Erichs. Gen. Spec. Staph. 526. - truncicola Fairm. Fn. Fr. I. 538).

A species which is easily identified by the punctation of scutellum, and by the brown, seemingly teneral color of the abdomen, and which in regard to the position of the pronotal side-punctures comes close to fulgidus, and in the punctation of the head bears likeness to ochripennis and othiniensis.

Black, glistening; head and pronotum shiny; elytra and abdomen finely haired; abdomen pitchy-red, toward the tip rust-red; outer part of the antennae, and tarsi, often also the tibiae brownish.

The head of ♂ transverse, that of ♀ more rounded, and smaller; its posterior(hindmost) large, puncture of the forehead is placed almost in middle between the eye and constriction of the head, and in front of this, closer to posterior margin of the eye an other large, bristle-bearing puncture is found; the temples are punctate, and as

well as pronotal and elytral sides beset with stiff, outstanding bristles; antennal outer joints feebly transverse. Pronotum is a little broader than elytra, and has feebly impressed sides, outside of the usual dorsal punctate row a somewhat irregular row with 4-5 punctures, of which the hindmost is set farther back than the large, bristle-bearing puncture of the side-margin; scutellum is simple, and sometimes also feebly punctate; elytra as long as pronotum, rather robustly,

but not densely punctate, occasionally with feebly changeable color.

L. 8-10 mm.

In the ♂ the abdominal sixth ventral joint with deep emargination at tip.

Distributed in Middle Europe and England, everywhere rare and local. In this country it is found particularly at outflowing sap of the alder tree, but is also found in hollow trees, and under the bark of dead tree-trunks, and its northern boundary is seemingly here and in Skaane. (Dyrehaven, Bognaes, Frederiksvaerk, Naestved; Skholt in Lolland; Ry and several places).

10. Q. brevicornis Thoms.

(Thoms. Skand. Col. II, 175; Muls. et Rey Brévip. 1877, 492; Ganglb. Käf. M. II, 398.- Eppelsheimi Seidl. Fn. Balt., Ed. II, 398).

Among the closest allied species with red elytra, this species can be identified by the position of the characteristic bristle-bearing punctures of head and pronotum, and by finely spiniferous posterior femora.

Black, glistening; head and pronotum with specular shine; elytra and abdomen finely haired; elytra brightly red; base of antennae black, their outer part and the legs brownish, femora oftenest brownish-black.

The head is transversally rounded, larger and broader in ♂ than in ♀; the forehead's hindmost large, bristle-bearing puncture is placed in middle between the eye and constriction of head; antennae are short and robust, their outer joints (6-10) strongly transverse; pronotum broader than elytra, slightly impressed on sides, and outside of the usual dorsal punctate rows, with only a few punctures at fore-margin, and one large, bristle-bearing puncture near the side-margin. Elytra are as long as pronotum, with rather fine and not dense punctation; the abdomen with fine and dense punctation. Hind femora on ventral side's inner margin with a row of fine spines, which are particularly distinct in robust ♂♂. L. 9-11 mm.

In the ♂ the abdominal sixth ventral joint is emarginate at tip.

Distributed in North and Middle Europe, but rare; in this country most frequent in woodland regions, in hollow trees with bird's nests, more rarely in cellars, barns, and outhouses.

11. Q. mesomelinus Marsh.

(Marsh. Ent. Brit. 510; Muls. et Rey Brévip. 1877, 497; Ganglb. Käf. M. II, 400. - fulgidus var. Erichs. Gen. Spec. Staph. 526; Kraatz Ins. D. II, 492. - temporalis Thoms. Skand. Col. IX, 161).

A rather variable species, identifiable by the color, and position of the characteristic bristle-bearing punctures of head and pronotum. (Fig. 110, S. 349).

Black, glistening; head and pronotum shiny; elytra and abdomen

finely haired; antennae toward the tip, and the tarsi brownish. In the teneral animals the pronotum, often also elytra, and posterior margin of abdominal joints brownish-red, antennae and legs lighter.

The head of ♀ is oval, that of ♂ transverse and larger; the forehead's hindmost large, bristle-bearing puncture is closer to the eye than to the constriction of head; ----- (Page 359) ----- the temples are sparsely punctate; antennal outer joints not strongly transverse. Pronotum is as broad as - or broader than elytra, with more or less impression on sides, and outside of the usual dorsal punctate rows, with only a few side-punctures close to the fore-margin, none of these are placed farther back than the large, bristle-bearing puncture of side-margin. Elytra are somewhat longer than pronotum, with rather fine and dense punctation, abdomen with fine and dense punctation, tapering posteriorly. L. 9-11 mm.

In the ♂ the abdominal sixth ventral joint smoothened at tip, feebly impressed and emarginate.

Distributed everywhere, and common here in hollow trees, plant-fertilizer, under leaves and fagot, in outhouses, stables, bakeries, and cellars, where the larva also often is found. One variety with brownish elytra, and a small puncture close to the eye's posterior margin (v. Janneri) is rare. (Aalborg in a cellar). - J. mesomelinus is one of the most widely distributed quedid, found not only in the entire Europe, but also in Greenland, N. America, Peru, New Zealand, and Australia.



12. Q. maurus Sahlb.

(Sahlb. Ins. Fenn. I, 317; Erichs. Gen. Spec. Staph. 551; Ganglb. Käf. M. II, 400 - fageti Thoms. Skand. Col. IX, 161; Muls. et Rey Brévip. 1877, 494).

Very closely allied to mesomelinus, from which it differs by the following characters:

As a rule it is somewhat smaller, narrower and more slender; the color is more uniform and deeply black, only the tarsi and fore-tibiae brownish; elytra with more scattered and robust punctation, and in the ♂ the abdominal sixth ventral joint is at tip more deeply emarginate, also the posterior margin of fifth ventral joint is at middle feebly emarginate and smoothened. L. 7-9 mm.

Local and rare or very rare (Silkeborg, Tisvilde, Hillerød, vicinity of Copenhagen). At the first mentioned place it is more often beaten down from the blooming hawthorn (E. Petersen), also found in hollow trees, under leaves, and at fungi; distributed in the entire Middle and North Europe.

13. Q. xanthopus Er.

(Erichs. Käf. Mk. Br. I, 487; Gen. Spec. Staph. 527; Kraatz Ins. D. II, 495; Thoms. Skand. Col. II, 175; Muls. et Rey Brévip. 1877, 521; Ganglb. Käf. M. II, 400).

From the closest allied, preceding species, it is easily divided by its yellowish-red antennal base, and legs.

Pitch-black or pitch-brown, glistening; head and pronotum with specular shine; elytra and the abdomen finely haired; posterior margins of abdominal joints, the brown antennal base, mouth-parts, and legs yellowish-red. In the teneral animals pronotum and elytra are



reddish-brownish.

The head is short and oval; the hindmost, large, bristle-bearing puncture of forehead is set a little closer to the eye than to the constriction of the head; temples are finely punctate; the antennae rather slender, and their next-last joints only feebly transverse; -----(Page 360) ----- pronotum as broad as elytra, somewhat narrowing anteriorly, with strongly deflected, not impressed sides, and with only 1-2 side-punctures outside of the usual dorsal punctate row close to the fore-margin. Elytra are fully as long as pronotum, with rather coarse and not dense punctation; the abdomen tapering toward the tip, with rather fine and dense punctation. L. 7-9 mm.

In the ♂ the ventral sixth abdominal joint smoothened and broadly emarginate at tip.

Distributed in Europe and North Asia, and rather frequent here particularly in woodland regions, under leaves, in hollow trees, in plant-fertilizer, and outhouses, and like places.

14. Q. tenellus Gravh.

(Gravh. Mon. 54; Erichs. Gen. Spec. Staph. 551; Ganglb. Käf. M. II, 401. - polystigma Wankow; Muls. et Rey Brévip. 1877, 540).

In appearance, form and color most like the preceding species, from which it however is easily separated by the number and position of characters of head and pronotum.

Black, glistening; head and pronotum shiny; the elytra and abdomen finely haired; elytra black or brownish, their suture, sides and

posterior margin as well as posterior margins of abdominal joints narrowly reddish; antennae brownish, their base, mouth-parts, and the legs rust-red, femora often brownish-red.

The head is rounded; the hindmost large, bristle-bearing puncture of forehead, which sometimes is double (Ganglb.), is placed much closer to the eye than to the constriction of head, back of this are two or three vertex-punctures placed in a row, all punctures set in oblique row between hindmost inner margin of eye and the constriction. Antennae are short, their next-last joints transverse. Pronotum is scarcely broader than long, and feebly impressed on sides; the dorsal rows each with four punctures, of which the hindmost is far behind middle of pronotum, outside of dorsal row on sides anteriorly are found two-three punctures in a row. Elytra are as long as pronotum, with rather dense and coarse punctation, the abdomen likewise with dense, but finer punctation. L. 7-8 mm.

In the ♂ the sixth ventral abdominal joint emarginate at tip.

It is known from Finland, Lithuania, and Germany (?) in this country it is found at V. Ulslev, Lolland (Pastor J. Møller, 4. 9. 06 1 specimen) and at Lejre (?) in a mouse's nest (E. Rosenberg, 1 specimen).

15. Q. scitus Gravh.

(Gravh. Mon. 50; Erichs. Käf. Mk. Br. I, 487; Gen. Spec. Staph. 528; Kraatz Ins. D. II, 496; Thoms. Skand. Col. II, 177; Muls. et Rey Brévip. 1877, 523; Ganglb. Käf. M. II, 401).

Distinguishable by the color, particularly by entirely reddish-yellow antennae, also by incomplete marginated genae.

Reddish-brown, glistening; head and pronotum shiny; elytra and abdomen finely haired; the head and often also the middle of pronotum black or brownish-black; elytra brownish-red, their outer hindcorners more or less brown; the antennae, or their base only, as well as the legs reddish-yellow.

The head is rounded oviform; the hindmost large, bristle-bearing puncture of the forehead is placed closer to the eye than to the constriction of head, and on ventral side of head the genal margin - in contrast to all other species of this subgenus - is incomplete, only posteriorly is it distinct; the antennal next-last joints rather feebly transverse. Pronotum is a little broader than elytra, not impressed on sides, and outside of the usual dorsal punctate row with only 1-2 side-punctures nearest the fore-margin. Elytra is a little longer than pronotum, with rather robust and not dense punctation; the abdomen smoothly tapering, with rather fine and dense punctation. L. 6-8 mm.

In the ♂ the sixth ventral abdominal joint is smoothened and obtusely emarginated at tip.

Distributed in North and Middle Europe; in hollow trees and under bark, particularly on oak, also found with ants (Form. rufa); very rare everywhere in Denmark. (Lindum Forest south of Hobro; Ejerup in Fyn; Slagelse, Jaegerspris, Valsøllille; V. Ulslev, Loll.; Bornholm).

16. Q. infuscatus Er.

(Erichs. Gen. Spec. Staph. 543; Muls. et Rey Brévip. 1877, 526; Ganglb. Käf. M. II, 401).

A comparatively small species, easily distinguishable by the punctate scutellum, and by the color of elytra.

Black, or pitch-black, glistening; head and pronotum shiny; elytra and the abdomen finely haired; pronotum sometimes brownish; elytra brownish yellow with a broad, pitch-brown longitudinal stripe close to the suture; posterior margins of abdominal joints, base of the brown antennae, mouth-parts, and legs yellowish-red.

The head is short oval; its hindmost large. puncture of forehead is a little closer to the eye than to the constriction of head; antennal next-last joints are distinctly transverse; pronotum as broad as elytra, its sides not impressed, outside of the usual dorsal row with a row of 2-3 punctures anteriorly. Scutellum with scattered, but distinct punctation; elytra longer than pronotum, with rather coarse, and not dense punctation; the abdomen tapering, with rather fine and dense punctation. L. 5 mm.

In the ♂ the sixth ventral abdominal joint acutely emarginated.

Distributed in Middle Europe, everywhere extremely rare. It has here been found at Aalborg and Kolding, in the crumblings in hollow poplars, which were ruined by the larva of Cossus, near Odense 1 specimen on a wall.

(Subgenus Quedionuchus Sharp.)

17. Q. cinctus Payk.

(Payk. Mon. Car. App. 137; Muls. et Rey Brévip. 1877, 532; Ganglb. Käf. M. II, 402. - impressus Panz. Faun. Germ. 36, 21; Erichs. Käf. Mk. Br. I, 489; Gen. Spec. Staph. 530; Kraatz Ins. D. II, 499; Thoms. Skand. Col. II, 174).

Easily identified by the punctate rows of elytra.

Black, strongly glistening; head and pronotum with specular shine; elytra almost naked, abdomen finely haired; elytra of the imago are black, often with feeble greenish reflection, their suture, sides, and posterior margin reddish yellow, - in the teneral specimens the elytra is out-spread brownish; posterior margins of the abdominal joints are oftenest translucent reddish; legs brownish with darker femora.

The head is rounded; the hindmost large bristle-bearing puncture of forehead nearer to the eye than to the constriction of head; antennal outer joints are feebly transverse; pronotum scarcely as broad as elytra, slightly narrowing anteriorly, with 2-3 punctures in a row outside the usual dorsal punctate row; elytra somewhat longer than pronotum, background with scattered, very fine and feeble punctation, and with three rows of large punctures on the dorsum, of which the middle one oftenest has 5, the inner along suture 6, and the outmost from the humerus downward 8 punctures; the abdomen, which oftenest is of metallic changeable color, is smoothly tapering, with rather fine and scattered punctation. L. 7-9 mm.

In the ♂ the hind femora finely spiniferous on ventral side, and the sixth ventral abdominal joint broadly emarginate at tip.

Distributed in Europe, and is in this country, mostly in woodland regions, common at fungi, rotten plant-matter, and under foliage.

18. Q. laevigatus Gyllh.

(Gyllh. Ins. Suec. II, 306; Erichs. Käf. Mk. Br. I, 488: Gen. Spec.



Staph. 529; Kraatz Ins. D. II, 497; Thoms. Skand. Col. II, 176; Muls. et Rey Brévip. 529; Ganglb. Käf. M. II, 402).

Flat and of rather even breadth; black, somewhat greasily shining; elytra, posterior margins of abdominal joints, antennal base, mouth-parts, and legs reddish or brownish yellow.

Head rounded; antennal next-last joints strongly transverse, pronotum at least as broad as elytra, ground surface of brown changeable color, outside of the dorsal punctate rows with only a single puncture near fore-margin; elytra longer than pronotum, naked, with two feeble punctate rows, one along the suture, an other at middle, and with 4-5 fine punctures in each, otherwise without punctation, but the surface is extremely finely shagreened, and due to this with somewhat dull shine; abdomen of somewhat even breadth, with fine and sparse punctation; hind-femora in both sexes with strongly spiniferous ventral side. L. 7-8 mm. --- (Page 363) -----

In the ♂ the fore-tarsi are more strongly dilated than in the ♀; the sixth ventral abdominal joint is feebly emarginate (Ganglb.).

Distributed throughout Middle and North Europe, in Skaane it is common under bark of dead pinaceous trees (Thoms.). In this country it has heretofore not been found, but might possibly be encountered, most probably in Bornholm.

3. Subgenus Quedius s. str. Thoms.

19. Q. fuliginosus Gravh.

(Gravh. Micr. 34; Erichs. Käf. Mk. Br..I, 490; Gen. Spec. Staph. 537; Kraatz Ins. D. II, 503; Thoms. Skand. Col. II, 173; Muls et Rey Brévip. 1877, 542; Ganglb. Käf. M. II, 403. - tristis Gyllh. Ins Suec. II, 301).

One of our largest species, smoothly convex, and of rather even breadth, and like the two following with undivided, rounded labrum; in relation to these particularly identifiable by the scutellum which is smooth without punctation.

Black, glistening; head and pronotum shiny; elytra and the abdomen with fine black hair; antennae and mouth-parts rust-red, the first three antennal joints often black on dorsal side; legs pitch-black with brownish-red tarsi.

The head is broadly oval; labrum entire with rounded fore-margin, the forehead anteriorly with two or three punctures on each side, so that they form a transversal row of 4-6 punctures across the forehead, the outmost of these punctures at inner margin of eye, is the foremost large bristle-bearing puncture of the forehead, occasionally this alone is found. The eyes are very large, three times as long as the temples, convex; antennae rather slender, their next-last joints hardly as broad as long. Pronotum is posteriorly fully as broad as elytra, outside of the usual dorsal punctate row with 2-3 rowed punctures on the sides anteriorly; scutellum is without punctation and smooth; the elytra scarcely longer than pronotum, with rather robust and very dense, slightly scabrous punctation, with modulated shine; abdomen with dense and rather fine punctation, often of metallic changeable color. L. 10-12 mm

In the ♂ the fifth ventral abdominal joint feebly, the sixth deeply emarginated, and in front of the emargination smoothed.

Distributed in Europe on damp ground, and here it is rather common everywhere.

20. Q. tristis Gravh.

(Gravh. Micr. 34; Kraatz Ins. D. II, 502; Muls. et Rey Brévip. 1877, 544; Ganglb. Käf. M. II, 403. - frontalis Erichs. Gen. Spec. Staph. 536).

Very closely allied to fuliginosus, from which it however is easily separated by the following details:

The transversal punctate row of forehead, which by an interval is divided into two even parts, contains 6-8 punctures, of which the next-outmost on each side is oftenest placed a little before the others; the eyes are more flat than in fuliginosus and hardly as large; antennae more slender, their next-last joints, particularly in the ♂, very distinctly longer than broad; pronotum proportionally longer, and oftenest with three side-punctures, arranged in one, with the dorsal row parallel row; ----- (Page 364) ----- scutellum is distinctly punctate and haired; elytra and abdomen somewhat finer and still denser punctated than of the preceding species. - Elytra are sometimes brownish, antennae and legs rust-red. L. 10-12 mm.

Distributed in Middle Europe and England, but not found in Sweden, Finland or Norway; in Denmark it is found here and there on sandy shores under alluvium, more rarely on woodland ground (Esbjerg, Tisvilde, several places on the coasts of Bornholm; Katholm Forest at Vejle).

21. Q. molochinus Gravh.

(Gravh. Mon. 46; Erichs. Käf. Mk. Br. I, 489; Gen. Spec. Staph. 535; Kraatz Ins. D. II, 500; Thoms. Skand. Col. II, 173; Muls. et Rey Brévip. 1877, 548; Ganglb. Käf. M. II, 403).

From both the preceding species, to which it as a whole is very closely allied, it is separated namely by, that the elytra as a rule are reddish-brown, rarely black or yellowish-red; that the forehead anteriorly is without transverse punctate rows, with only the usual large bristle-bearing puncture in at margin of the eye, and that elytra are distinctly shorter than pronotum. From fuliginosus particularly it furthermore deviates in that the eyes are smaller, only twice as long as the temples, and that the scutellum is punctate and haired like that of tristis. L. 9-10 mm.

In the ♂ the sixth ventral abdominal joint with deep emargination, the fifth less deep, both of these as well as the third and fourth at middle posteriorly smoothened.

Distributed in Europe, North Asia and North America, on damp ground, and everywhere, also in this country, rather common. The variety with black elytra is found in Ermelunden, and Puderhegn north of Copenhagen; an other var., with yellowish-red elytra at Aalborg, at the gulf.

4. Subgenus Sauridus Muls. et Rey.

22. S. picipes Mannh.

(Mannerh. Brach. 26; Erichs. Käf. Mk. Br. I, 491; Gen. Spec. Staph. 537; Kraatz Ins. D. II, 505; Thoms. Skand. Col. IX, 172; Muls. et Rey Brévip. 1877, 560; Ganglb. Käf. M. II, 404).

Within the subgenus easily distinguished by the color of elytra, and by the proportionately long first joint of the hind tarsi.

Black, glistening; head and pronotum specularly shining; elytra and abdomen finely haired; elytra vividly brownish-red; antennae and legs yellowish-red.

the head is proportionally large, rounded oval, with labrum cleft at middle; antennae slender, their next-last joints longer than broad; eyes twice as long as temples; pronotum posteriorly as broad as elytra, anteriorly with the usual dorsal punctures, and a few scattered side-punctures, sides not impressed; elytra as long as pronotum, with dense and robust punctation; abdomen tapering, of strong metallic, changeable color, ----- (page 365) ----- with fine and dense punctation; first joint of hind tarsi distinctly longer than the claw-joint, as long as the second and third joint together. L. 9-10 mm.

In the ♂ the fifth and sixth ventral abdominal joints slightly emarginate.

Distributed and not rare, mainly under leaves on half-damp woodland ground. North and Middle Europe.

23. Q. nigriceps Kr.

(Kraatz Ins. D. II, 510; Thoms. Skand. Col. IX, 169; Muls. et Rey Brévip. 1877, 563; Ganglb. Käf. M. II, 407. - ruficollis Steph. Ill. Brit. V, 244).

Recognizable by the color, and by the proportionately long first joint of the hind tarsi.

Glistening; head and pronotum shiny; elytra and the abdomen haired; the head black; pronotum entirely yellowish-red or brownish at middle; elytra yellowish-red or brownish with lighter margins; abdomen brown or black, posterior margins of joints reddish-yellow; antennae, mouth-parts, and legs reddish yellow.

The head is rounded, oval with labrum cleft at middle; eyes twice

as long as temples, which are finely and densely punctate; antennae slender, their next-last joints as long as broad; pronotum posteriorly as broad as elytra, as long as broad; elytra hardly longer than pronotum, with dense and rather fine punctation; abdomen tapering, oftenest of strongly metallic changeable color, with somewhat finer, but particularly posteriorly, hardly as dense punctation as elytra; first joints of hind tarsi noticeably longer than the claw-joint, as long as the three middle joints together. L. 7-8.5 mm.

The joints of fore-tarsi of the ♂ more strongly dilated than of ♀; sixth ventral abdominal joint is at tip smoothened and slightly emarginate.

Distributed, but rather rare; mostly on high woodland ground, under leaves, and lichen. North and Middle Europe.

24. Q. fumatus Steph.

(Steph. Ill. Brit. V. 245; Ganglb. Käf. M. II, 406. - peltatus Erichs. Gen. Spec. Staph. 540; Kraatz Ins. D. II, 507; Thoms. Skand. Col. IX, 169; Muls. et Rey Brévip. 1877, 571).

A fusiform, rather flat species, distinguished by, and easily recognized by the finely shagreened, dully shining elytra.

Black, or pitch-black; head and pronotum shiny; elytra feebly, abdomen strongly glistening, both finely haired; elytral and pronotal sides brown; antennae, mouth-parts, and legs brown- or yellow-red, the hindmost tibiae metallic-shining.

The head rounded, proportionally small; eyes rather convex, twice as long as the temples; antennae slender, their middle joints distinctly, the next-last joints but very little longer than broad; pronotum

broader than long, about as broad as the elytra; these distinctly longer than pronotum,----- (Page 366)----- somewhat flat, with fine and rather dense punctation, besides this the background surface is very finely shagreened, and therefore somewhat dull; abdomen strongly tapering, strongly metallic-changeable color, with rather fine and not dense punctation; first joint of hind tarsi shorter, than the claw-joint. L. 7-9 mm.

In the ♂ the fore-tarsi are more strongly dilated than in the ♀; the fifth ventral abdominal joint with feeble, the sixth with deeper angular emargination, in front of emargination smoothed.

Not rare under leaves on damp woodland ground, and at the edge of water in alluvium. North and Middle Europe.

25. Q. umbrinus Er.

(Erichs. Käf. Mk. Br. I, 491; Gen. Spec. Staph. 541; Kraatz Ins. D. II, 509; Thoms. Skand. Col. II, 178; Muls. et Rey Brévip. 1877, 586; Ganglb. Käf. M. 406. - maurorufus Gyll. Ins. Suec. II, 309).

Identified by the coarsely punctated, comparatively short elytra, and a broader pronotum.

Black or pitch-brown, glistening; head and pronotum shiny; elytra and abdomen finely haired; outmost posterior margin of elytra brownish-red; antennae, mouth-parts, and legs darkly brown, knees and tarsi oftenest brownish-red.

Head rounded, posteriorly rather strongly constricted; eyes convex, amply twice as long as the temples, these rather densely punctate; next-last antennal joint at least as broad as long, pronotum

as broad as long, and at middle fully as broad as elytra, with distinct, not entirely rounded off posterior corners; elytra distinctly a little shorter than pronotum, with remarkable coarse, and not dense punctation; abdomen tapering, with more or less metallic changeable color, rather fine and not dense punctation; first joint of hind tarsi about as long as the claw-joint. L. 6-7 mm.

In the ♂ the fore-tarsi are more strongly dilated than in the ♀, and sixth ventral abdominal joint sharply emarginated at tip.

Distributed on damp ground, at lake shores often numerous in alluvium. North and Middle Europe.

26. Q. limbatus Heer.

(Heer Mitth. I, 74; Muls. et Fey Brévip. 1877, 591; Ganglb. Käf. M. II, 407. - maurorufus Erichs. Gen. Spec. Staph. 542; Kraatz Ins. D. II, 512; Thoms. Skand. Col. II. 178).

A rather narrow and slender species, in which the main character is comparatively short elytra.

Black or blackish-brown, glistening; head and pronotum shiny; the elytra and abdomen finely haired; pronotum often brown or reddish-brown with lighter sides; elytral suture narrowly reddish, the corners of humeri, and sides, also the distal posterior margin reddish or brownish yellow; posterior margins of abdominal joints often brownish yellow; antennae, mouth-parts, and legs reddish yellow.

Head rounded; antennae rather slender, their third joint considerably longer than the second, the next-last feebly transverse (♀) or as long as broad (♂); pronotum as long as broad, and as broad as elytra;

these distinctly a little shorter than pronotum, and not longer than their breadth together, with rather fine and dense punctation; abdomen tapering, with more or less metallic changeable color, finely and rather densely punctated; first joint of hind tarsi hardly as long as the claw-joint. L. 6-7 mm.

In the ♂ the fore-tarsi is more strongly dilated than in the ♀, and sixth ventral abdominal joint emarginate at tip.

Distributed in North and Middle Europe, on damp ground; rare in many places, rather common here, as well as in Skaane (Thoms.). -(See remarks to following species).

27. Q. maurorufus Gravh.

(Gravh. Mon. 50; Muls. et Rey Brévip. 1877, 600; Ganglb. Käf. M. II, 408. - modestus Kraatz Ins. D. II, 509; Thoms. Skand. Col. X, 316).

Body dark-brown, in the teneral animals lighter; head and pronotum shiny; elytra and abdomen finely haired, somewhat glistening; the head black; pronotum pitch-brown with reddish-brown sides or entirely reddish-brown; elytra unicolorous brown or brownish-black, or their posterior margin alone narrowly reddish-yellow; posterior margins of abdominal joints reddish; the antennae oftenest brownish; their base, mouth-parts, and legs reddish-yellow.

Head, antennae, and pronotum like in the preceding species; elytra a little longer than in this, as long as pronotum, with very dense and rather fine, somewhat rough punctation; abdomen tapering, of more or less metallic changeable color, anteriorly with rather dense and fine, posteriorly more scattered punctation. L. 6-7 mm.



In the ♂ the fore-tarsi are more strongly dilated than in the ♀, and the sixth ventral abdominal joint emarginate at tip.

Distributed in Middle Europe; also found in Skaane (Thoms.), but heretofore not with certainty denoted here. However a couple of specimens in my collection, found in Skörping Holme south of Aalborg under very damp foliage (10.1895. auth.) are seemingly this species. They resemble limbatus Heer (maurorufus Er.) but their elytra are a little longer, somewhat broader, and unicolorous brown. No other distinct difference have I found. Furthermore it must be considered that maurorufus Gravh. and maurorufus Er. (limbatus Heer) are often treated as synonyms (Seidlitz Faun. Balt. Ed. II, 397; jfr. Meinert Fort. o, Danm. Rovb. Ent. Medd. 1887-88, 259) and seemingly difficult to separate.

(Page 368)

28. Q. humeralis Steph.

(Steph. Ill. Brit. V, 220; Ganglb. Käf. M. II, 407. - suturalis Kiesw. Stett. Ent. Ztg. VI, 1845, 225; Kraatz Ins. D. II, 511; Muls. et Rey Brévip. 1877, 588. - marginalis Thoms. Skand. Col. IX, 171).

A somewhat flat, narrowly fusiform species, identified mainly by the color and punctation of the elytra.

Black or pitch-brown, glistening; head and pronotum shiny; elytra and abdomen finely haired; pronotum or sometimes its sides only are often reddish-brown; elytra pitch-black or brownish, a large spot on humerus, sides, posterior margin, and oftenest also the suture brownish-yellow; abdomen pitch-black or brownish-red with lighter margins of joints; antennae, mouth-parts, and legs reddish-yellow.



Head rounded; the third joint of the antennae distinctly longer than the second, the next-last, mainly in ♂, as long as broad; pronotum scarcely narrower than elytra, but noticeably, not entirely rounded off hind corners; elytra as long as pronotum, somewhat flat, rather robust, but not dense punctation; abdomen smoothly tapering, with fine and scattered punctation, more or less metallic changeable color; first joint of hind tarsi shorter than the last. L. 7-8 mm.

In the ♂ the fore tarsi are strongly dilated, and sixth ventral abdominal joint with angular emargination at tip.

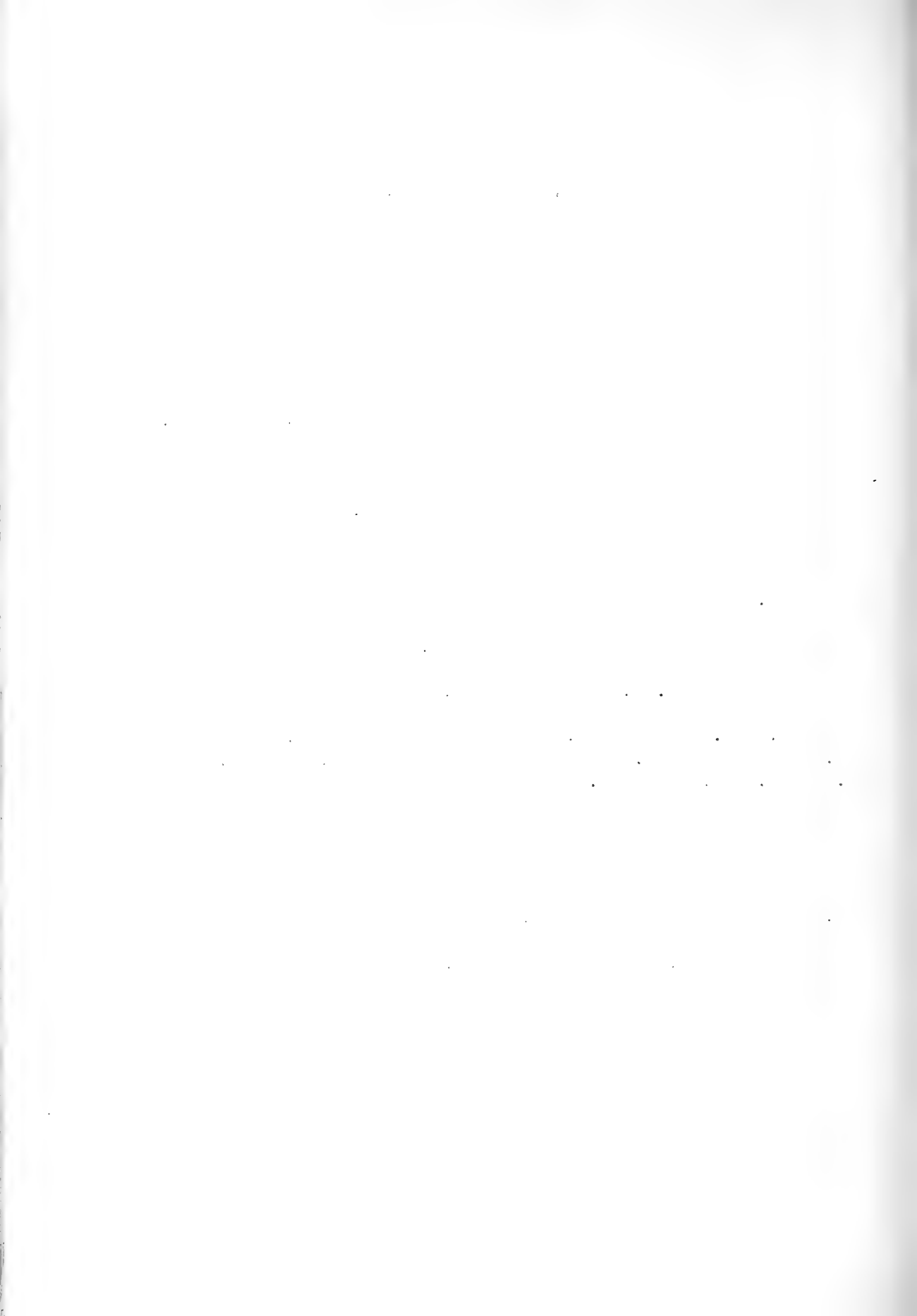
On damp woodland ground, at forest pools and like places under leaves; rare. (North-sjaelland, Sorø; Faaborg; Trelde Forest, Randers and other places). North and Middle Europe.

29. Q. obliteratus Er.

(Erichs. Gen. Spec. Staph. 549; Muls et Rey Brévip. 1877, 597; Ganglb. Käf. M. II, 408. - marginalis Kraatz Ins. D. II, 512. - suturalis Thoms. Skand. Col. IX, 170).

From the closest preceding species, and namely from humeralis, which it is most like, it mainly differs (according to Kraatz and Ganglb.) by the following details:

Elytra at middle, nearest the suture, with a broad, pitch-black longitudinal stripe, elsewhere brownish-yellow or reddish, sometimes entirely reddish. The body is rather fusiform, the head is smaller, and narrower than in the nearest preceding species, and the eyes less protruding; the antennae shorter, their third joint hardly longer than the second; pronotum is anteriorly distinctly narrowing; elytra



and the abdomen with finer and more dense punctation than in humeralis. L. 6-7 mm.

Distributed in Middle Europe and also found in Skaane (Thoms.); it is therefore not improbable that it also may be found within the sphere of our fauna, most likely in Bornholm.

30. Q. scintillans Gravh.

(Gravh. Mon. 70; Erichs. Käf. Mk. Br. I, 494; Gen. Spec. Staph. 549; Kraatz Ins. D. II, 519; Thoms. Skand. Col. II, 178; Muls. et Rey Brévip. 1877, 612; Ganglb. Käf. M. II, 409).

Within the subgenus easily identified by the punctation of the head, and by the ore- or bronze-lustre.

Head, pronotum, and scutellum black, ore or darkish-bronze colored, with specular shine; elytra and abdomen with fine golden hair; elytra brown with metallic lustre; abdomen pitch-black or black-brown, metallic changeable color, posterior margins of its joints often red- or yellow-brownish; the antennae pitch-black, their base, mouth-parts, and legs brownish yellow, tibiae oftenest blackish.

The head is rounded, and has across the forehead anteriorly a row of four punctures, of which the outer one on each side of inner margin of eye, forms the usual, foremost large bristle-bearing puncture of the forehead; the antennae rather short, their next-last joints feebly transverse; pronotum posteriorly as broad as elytra, slightly narrowing anteriorly; elytra a little longer than pronotum, with rather robust and not dense punctation; abdomen smoothly tapering, with dense

and very fine punctation, with hair which is longer and denser at sides than at middle; fore-tarsi in both sexes strongly dilated.

L. 5-6 mm.

In the ♂ the sixth ventral abdominal joint smoothed and feebly emarginate at tip.

Local, as a whole rare; most frequent in forest regions under leaves and fagot, also in waste at hay and straw stacks. North and Middle Europe.

31. Q. lucidulus Er.

(Erichs. Käf. Mk. Br. I. 495; Gen. Spec. Staph. 550; Kraatz Ins. D. II, 520; Muls. et Rey Brévip. 1877, 609; Ganglb. Käf. M. II, 409).

From scintillans, which it (acc.to Kraatz and others.) very greatly resembles, it differs mainly in that, the head, pronotum, and scutellum are greenish bronze-colored, the elytra yellowish-brown with greenish bronze-lustre, abdomen brownish-red or brownish-yellow with a darker middle-stripe, that pronotum anteriorly is more narrowing, elytra a little longer and distinctly with finer and denser punctation. L. 5-6 mm

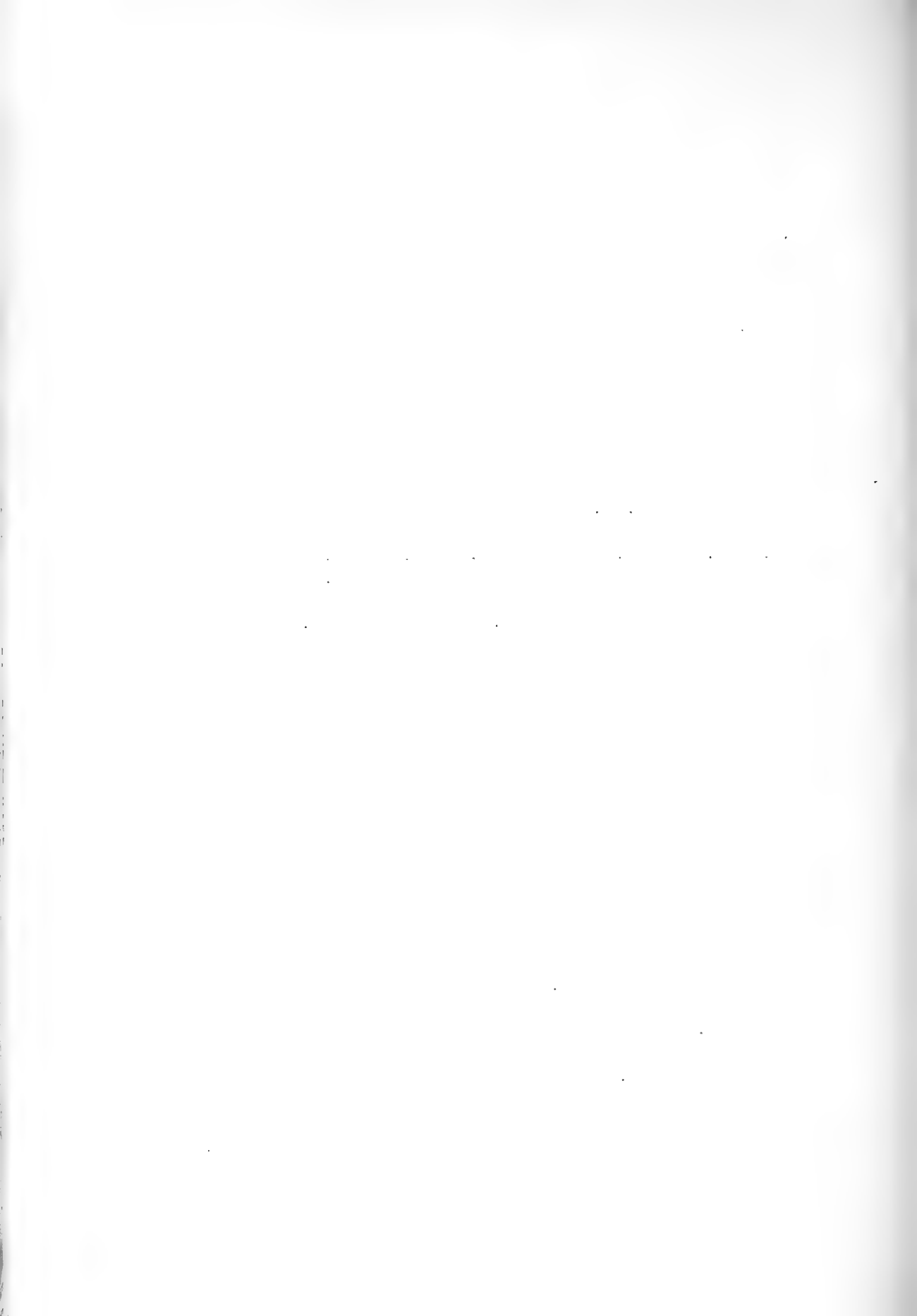
As it is found in North Germany, it is not improbable that it also may be found in this country.

5. Subgenus Ephirus Muls. et Rey.

32. Q. auricomus Kiesw.

(Kiesw. Stett. Ent. Ztg. XI, 1850, 220; Kraatz Ins. D. II, 501 Note; Muls. et Rey Brévip. 1877, 621; Ganglb. Käf. M. II, 410).

A rather small species of even breadth, remarkable by especial large eyes, and the peculiar abdominal hair-clothing.



Black, glistening; head, pronotum, and scutellum specularly shining with darkish or greenish metallic reflection; elytra greenish bronze-colored, with rough golden hair; abdomen with metallic changeable color, the base and sides of joints with spots of golden shiny hair, the rest of the abdomen with fine black hair; antennae, mouth-parts, and legs reddish-yellow.

The head is about as broad as pronotum, rounded; eyes convex, and so large that they almost fill the entire sides of the head; the antennae are short; pronotum as broad as elytra, anterior part of pronotum somewhat constricted, and somewhat convex on dorsum; elytra as long as pronotum, with rather coarse and not dense punctation; abdomen with fine, scattered punctation, feebly tapering; fore-tarsi in both sexes strongly dilated. L. 4.5-5 mm.

In the ♂ the sixth ventral abdominal joint smoothed at tip and with deep angular emarginatin.

Distributed especially in West Europe. It lives in the wet moss at flowing springs and waterfalls. In this country it has heretofore been found only in the northern part of Jutland, in the spring-moss in "Ravn-Spring" at Raebild Hills, Skørping, where it several times has been taken in numbers (auth. et. al.).

33. Q. rufipes Gravh.

(Gravh. Micr. 171; Erichs. Den. Spec. Staph. 543; Muls. et Fey Brévip. 1877, 625; Ganglb. Käf. M. II, 410. - semiobscurus Marsh. Ent. Brit. 512).

Considerably larger than the two following species, and is recog-

nized by the punctate scutellum, and mainly also by the comparatively long third joints of the antennae.

Fusiform, black; head and pronotum with specular shine; elytra black or blackish-brown, very finely haired, feebly glistening; abdomen of metallic changeable coloring, with very fine grayish-black hair; antennae, mouth-parts, and legs reddish-yellow.

The head is oval, with very large eyes and very short temples; labrum at middle with feeble emargination; antennae rather slender, their third joint considerably longer than the second; pronotum posteriorly as broad as elytra, forwardly rather strongly narrowing; elytra as long as pronotum, and together with scutellum and the smoothly tapering abdomen with particularly fine and dense punctation. The first joint of hind tarsi distinctly longer than the claw-joint. L. 7-9 mm.

Distributed in West and Middle Europe. It is here very rare and local (Hvedholm Dyrehave, Faaborg, under foliage, superintendent of schools Jørgensen 8. 1900, a few specimens; W. Ulslev, Loll., Pastor J. Møller 5. 1911).

34. Q. picipennis Heer.

(Heer Faun. Helv. I, 279; Ganglb. Käf. M. II, 411. - attenuatus Gyllh. Ins. Suec. II, 311; Erichs. Käf. Mk. Br. I, 493; Gen. Spec. Staph. 546; Kraatz Ins. D. II, 515; Thoms. Skand. Col. II, 179; Muls. et Rey Brévip. 1877, 642).

A somewhat fusiform species with oval head and especially fine and dense punctation, feebly or dully shining abdomen.

Black; head and pronotum shiny, most often with feeble metallic reflection; elytra and abdomen finely and densely haired; elytra pitch-brown with feeble bronze-lustre, lighter toward the posterior margin; antennae, mouth-parts, and legs reddish yellow; hind femora and hind tibiae sometimes dark.

Head oval, with large eyes and very short temples; the antennal third joint only a little longer than the second; pronotum posteriorly as broad as elytra, narrowing anteriorly; elytra as long as pronotum, as well as scutellum with very fine and dense punctation; abdomen tapering, with especially fine and dense punctation, dully shining, often of feeble metallic changeable color. First joint of hind tarsi as long as the claw-joint. L. 5-6 mm.

In the ♂ the fore-tarsi are more strongly dilated than in the ♀.

Distributed, but rare or very rare; on sandy seashores (Halk Strand, Samso, Boto, Fano, and several other places) also on dry forest ground (Frederiksdal, Gribkov, and several places). North and Middle Europe.

35. J. boops Gravh.

(Gravh. Micr. 21; Erichs. Käf. Mk. Br. I, 494; Gen. Spec. Staph. 548; Kraatz Ins. D. II, 516; Thoms. Skand. Col. II, 179; Muls. et Rey Brévip. 1877, 651; Ganglb. Käf. M. II, 412).

Narrower, of more even breadth, and most often smaller than the preceding species, with more rounded, proportionately broader head, and less densely punctated abdomen.

Black, glistening; head and pronotum shiny; elytra and the abdomen finely haired; the elytra often brownish; antennae, mouth-parts,

and legs reddish yellow, the hindmost tibiae sometimes dark.

The head is broadly rounded, very little narrower than pronotum, with very large, convex eyes, which almost entirely fill the sides of head; the third antennal joint scarcely longer than the second; pronotum posteriorly as broad as the elytra, scarcely narrowing anteriorly; elytra as long as pronotum, occasionally a little shorter (v. falliciosus Kr.), together with the scutellum finely and densely punctated, but less fine and dense than in picipennis; abdomen tapering posteriorly, with dense and very fine punctation, though less dense than in the preceding species. First joint of hind tarsi is a little shorter than the claw-joint. L. 4-5 mm.

In the ♂ the fore-tarsi more strongly dilated than in the ♀, and the sixth ventral abdominal joint is angularly emarginate at tip.

Distributed in Europe, and everywhere in Denmark common, as well in forests as on field-, marsh- and heather-ground under the plant-cover.

2. Division Staphylinina.

Prosternum anteriorly without gular plate. The inflected sides of pronotum horizontal. As a rule the head is posteriorly with strongly neck-formed constriction, its sides ventrally without ridge-formed margin. Antennae inserted farther from each other than from the eyes. Scutellum punctate and haired.

Key to Genera.

1. The tongue emarginate or cleft at tip. Fore-tibiae coarse, thick-



ened toward tip. The neck-part of the head punctate, often densely haired. Pronotum at middle without punctate rows, either with punctation all over or smooth at middle..... 2.

- The tongue not emarginate or cleft. Fore-tibiae narrow. Neck-part of the head not punctate. Pronotum as a rule shiny, with two longitudinal rows of punctures at middle, and a few scattered punctures on sides, more rarely either without punctate rows at middle, or densely punctate, and with a smooth middle line..... 5.

- 2. Middle-coxae peculiarly broadly separated. Antennae short, hardly longer than the head, their 5-6 joints somewhat club-formedly thickened..... 3.

- Middle-coxae either contiguous or not very broadly separated. Antennae much longer than head, not club-formedly thickened..4.

- 3. Head and pronotum at middle shiny and naked, rough-haired at sides..... 65. Creophilus Mannh.

- Head and pronotum as well as the rest of the body furred 66. Emus Curt.

- 4. Pronotal fore-corners acutely protruding...67. Ontholestes Langlb.

- Pronotal fore-corners rect- or obtuse-angular: 68. Staphylinus Linn.

- 5. Pronotum at middle as a rule with two punctate rows, and on sides with single or scattered punctation, rarely without punctate rows. Head and pronotum, with exception of scattered, erect bristles naked, shiny..... 6.

- Pronotum with smooth and rather dense punctation, and with pol-

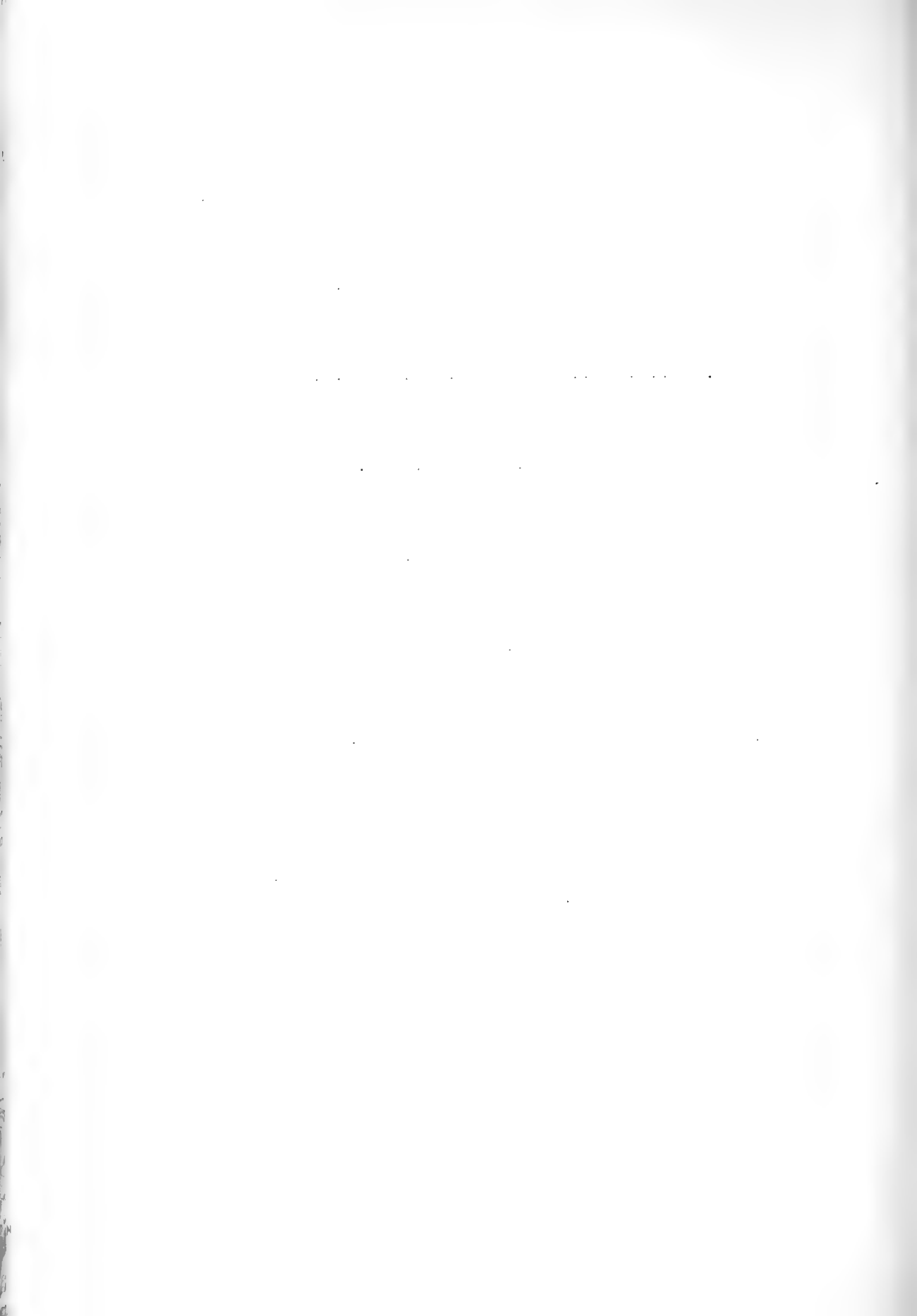
ished middle-line. Head and pronotum, besides erect bristle-hairs, with a fine, prostrate, sparse hair-covering.... 7.

6. Pronotum narrowed anteriorly, or rather even breadth. Elytra hardly longer than pronotum 69. Philonthus Curt.
- Pronotum distinctly narrowing posteriorly. Elytra longer than pronotum 70. Cafius Curt.
7. First joint of hind tarsi distinctly longer than the claw-joint. Head and pronotum dull 71. Remus Holme.
- First joint of hind tarsi not longer than the claw-joint. Head and pronotum more or less glistening..... 8.
8. The second antennal joint thickened, as thick as the first, much thicker than the third (Fig. 119)..... 72. Actobius Fauv.
- The second antennal joint not thickened, and not thicker than the third..... 73. Bisnius Thoms.

65. Genus Greophilus Mannh.

(Mannerh. Brach. 1830, 16; Kraatz Ins. D. II, 528; Thoms. Skand. Col. II, 140; Muls. et Rey Brévip. 1877, 76; Ganglb. Käf. M. II, 414. - Staphylinus genus II. Erichs. Gen. Spec. Staph. 347).

From the following species, Emus, in similarity with which it has very widely separated middle-coxae, and short, clubformedly thickened antennae, it differs in that the head and pronotum at middle are naked and shiny, that the antennal club only includes the five last, strongly thickened joints, and that the first joint of hind tarsi is stretched, almost as long as the three following joints together. The dorsal side margin of pronotum disappears behind the fore-corner, and is



not contiguous with the ventral one as in the three closest following genera.

This genus encludes only 1 European, widely distributed species.

1. C. maxillosus Linn.

(Linne Syst. Nat. 1758, 421; Erichs. Käf. Mk. Br. I, 432; Gen. Spec. Staph. 348; Kraatz Ins. D. II, 529; Thoms. Skand. Col. II, 141; Muls. et Rey Brévip. 1877, 78; Ganglb. Käf. M. II, 415).

Deeply black, glistening; the head, pronotum at middle, and humeri naked, with specular shine, the rest of the body more or less densely haired; temples and pronotal fore-corners rough-haired, elytra with a broad, ash-gray, densely haired transversal band, spotted with several small patches of black hair, the three middle, ventral abdominal joints, and side-margins with dense, the dorsal side as well as the rest of the joints with sparse, ash-gray hair.

Body robust, of rather even breadth; head broadly square, in robust ♂♂ most often broader than pronotum, the temples with dense and coarse, the rest with extremely fine, scattered punctation; antennae short, scarcely longer than the head, strongly club-formed, their last five joints broad and increasingly thickened; eyes are placed high, oblong, flat. Pronotum is posteriorly almost as broad as elytra, somewhat narrowing posteriorly, the sides and posterior margin rounded in same rounding, dorsum at middle smooth, the surrounding surface, particularly the fore-corners densely punctate; elytra somewhat longer than pronotum, with exception of the almost smooth, shiny humeral cor-



ners rather densely and finely punctate, and with a row of 5-6 larger bristle-bearing punctures at middle. Abdomen with fine and very dense punctation. L. 15-22 mm.

In the ♂ the head as a rule is larger than in the ♀ the sixth ventral abdominal joint is deeply emarginated at tip.

Distributed in Europe, and everywhere in this country common at carrion, manure, and rotten plants.

A rare variety, ciliaris Steph., in which the scutellum, the tip of elytra, abdominal tip, and margins of joints are golden yellow haired, is found in Scotland and Germany, but not heretofore found in this country.

66. Genus Emus Curt.

(Curtis Erit. Ent. XII, 1835; Kraatz Ins. D. II, 530; Thoms. Skand. Col. II, 139; Muls. et Fey Brévip. 1877, 71; Ganglb. Käf. M. II, 416. - Staphylinus genus I. Erichs. Gen. Spec. Staph. 346).

Body very robust, broad and thick, remarkable by its furry, humblebee-like vestiture; head very large, as broad as pronotum; eyes small and placed high; the antennae short, scarcely longer than the head, their first joint scape-formedly elongated, the last six joints considerably broader than the preceding, whereby the antennae become feebly club-formed; pronotum posteriorly rounded to form a half circle, narrower than the elytra, their dorsal sidemargin anteriorly contiguous with the ventral side-margin; abdomen of even breadth; legs robust, furred; tibiae finely spiniferous; fore-tarsi strongly, the others feebly dilated; first joint of hind-tarsi short, only a little longer than the following.

This genus encludes only 1 species, distributed in the entire Europe.

1. E. hirtus Linn.

(Linne Syst. Nat. 1758, 421; Erichs. Käf. Mk. Br. I, 431; Gen. Spec. Staph. 346; Kraatz Ins. D. II, 531; Thoms. Skand. Col. II, 140; Muls. et Rey Brévip. 1877, 73; Ganglb. Käf. M. II, 416).

Black; elytra, pronotum, and abdomen often feebly bronze-glistening; the body covered entirely with a furry, more or less dense vestiture, which on the head, the larger part of pronotum, and the last three abdominal joints are golden yellow, the pronotal posterior margin, the anterior part of elytra, and of abdomen is black, and the posterior half part of elytra grayish-yellow; the surface of ventral side is often bluish or violet glistening. L. 20-25 mm.

In the ♂ the head is broader than in the ♀, the trochanter of the hind legs are long and at tip with hook-formed elongation, the hindmost tibiae slightly curved.

Distributed, but as a whole rare here, most frequent on high, open fields at fresh cow-manure, but also at carrion, and at rotten fungi; it hunts flies, Aphodians and other insects. I have seen it most numerous on sandy fields at Skagen, where the acres are fertilized with rotten fish and fish-waste; it is generally found singly.

67. Genus Ontholestes Ganglb.

(Ganglb. Käf. Mitteleurp. II, 417. - leistotrophus Kraatz Ins. D. II, 532; Muls. et Rey Brévip. 1877, 81. - Schizochilus Thoms. Skand. Col. II, 141. - Staphylinus genus VI, Erichs. Gen. Spec. Staph. 359).

From Staphylinus, to which this genus is closely allied, it is separated in that the mesosternum at middle-line is finely carinated,



and that the middle-coxae are more widely separated, also that the pronotal fore-corners are protruding and acute.

The head is broad, almost square, with large, slightly convex eyes, and plump temples; antennae rather slender, longer than the head, not thickened outwardly; pronotum posteriorly narrowing and rounded off, narrower than elytra; its dorsal side-margin is under the strongly protruding, acute-angular fore-corners contiguous with the ventral side-margin; elytra somewhat longer than pronotum; abdomen feebly tapering; legs rather slender, tibiae finely spiniferous, the middle ones slightly curved, the fore-tarsi strongly dilated, first joint of hind-tarsi rather stretched, almost as long as the following three joints together.

In North and Middle Europe only 2 species are found.

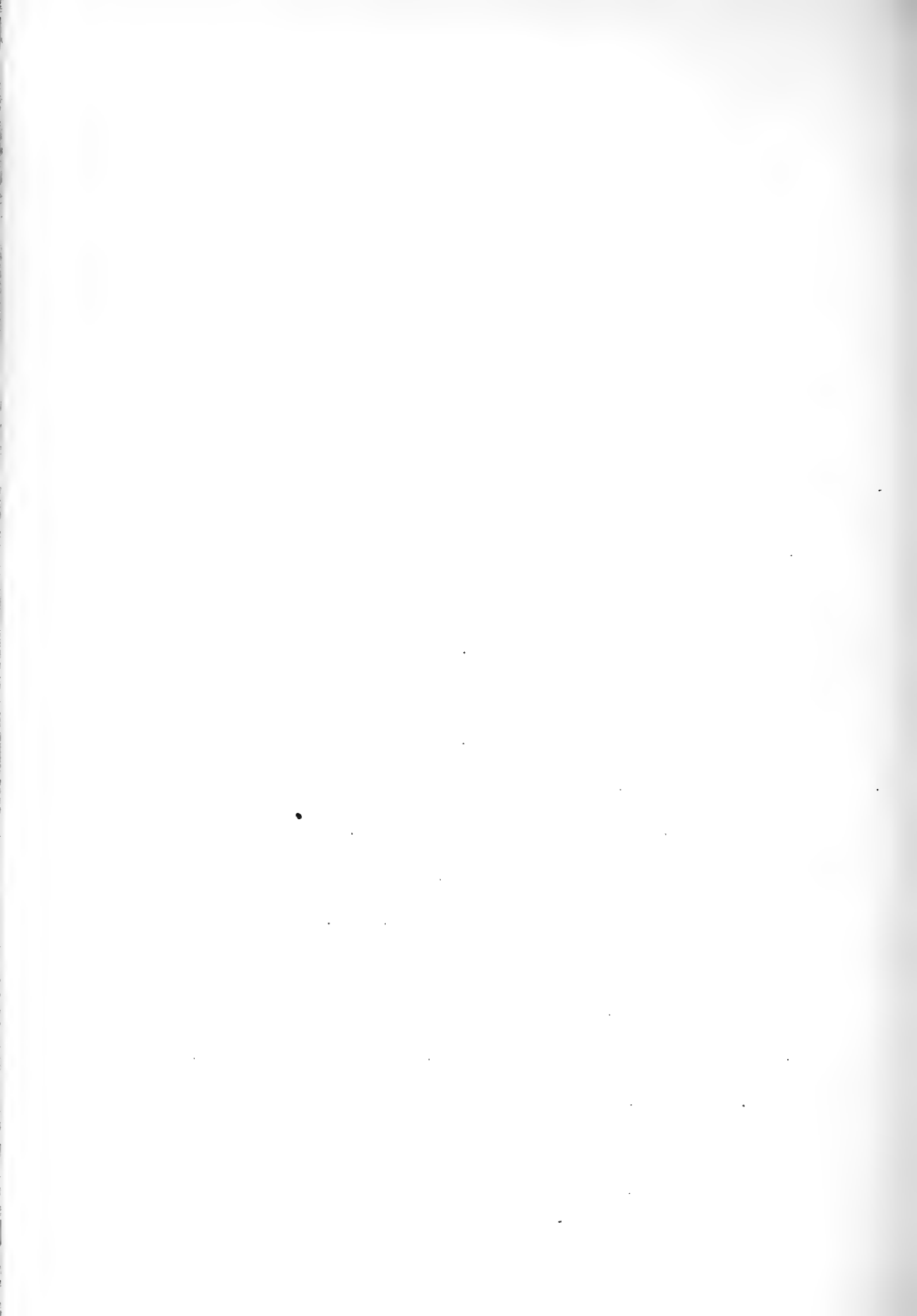
Key to Species.

1. Antennal base yellow. legs predominantly yellow, inner side of femora black. L. 15-20 mm 1. O. nebulosus Fabr.
- Antennae yellow, brownish toward tip. Legs black. Species smaller. L. 10-15 mm 2. O. murinus Linn.

1. O. nebulosus Fabr.

(Fabr. Ent. Syst. I, 520; Erichs. Käf. Mk. Br. I, 432; Gen. Spec. Staph. 360; Kraatz Ins. D. II, 534; Thoms. Skand. Col. II, 142; Muls. et Rey Brévip. 1877, 83. - tessellatus Fourer. Ganglb. Käf. M. II, 418).

Black; pronotum dully bronze-colored, together with abdomen covered with a dense, felt-like, prostrate hair-clothing, which on the head,



pronotum, and elytra is a mixture of silver-gray and golden-brownish, with darker spots and undulated lines, the abdomen black and golden-brown; scutellum and two spots on each of the first four free dorsal abdominal joints velvety black; metasternum and base of the ventral abdominal joints with light-golden hair; antennal base, mouth-parts, and mouth, also partly the legs, reddish-yellow, the inner part of femora black, hind tibiae and hind tarsi brownish.

Head, pronotum, and elytra with very densely shagreened surface, the first two parts furthermore with very fine and dense, elytra with less dense punctation; temples a little shorter than the eyes; sides of pronotum are groove-like impressed, behind middle incurved; elytra longer than pronotum. Posterior margin of fifth free dorsal abdominal joint is darkly margined. L. 15-20 mm

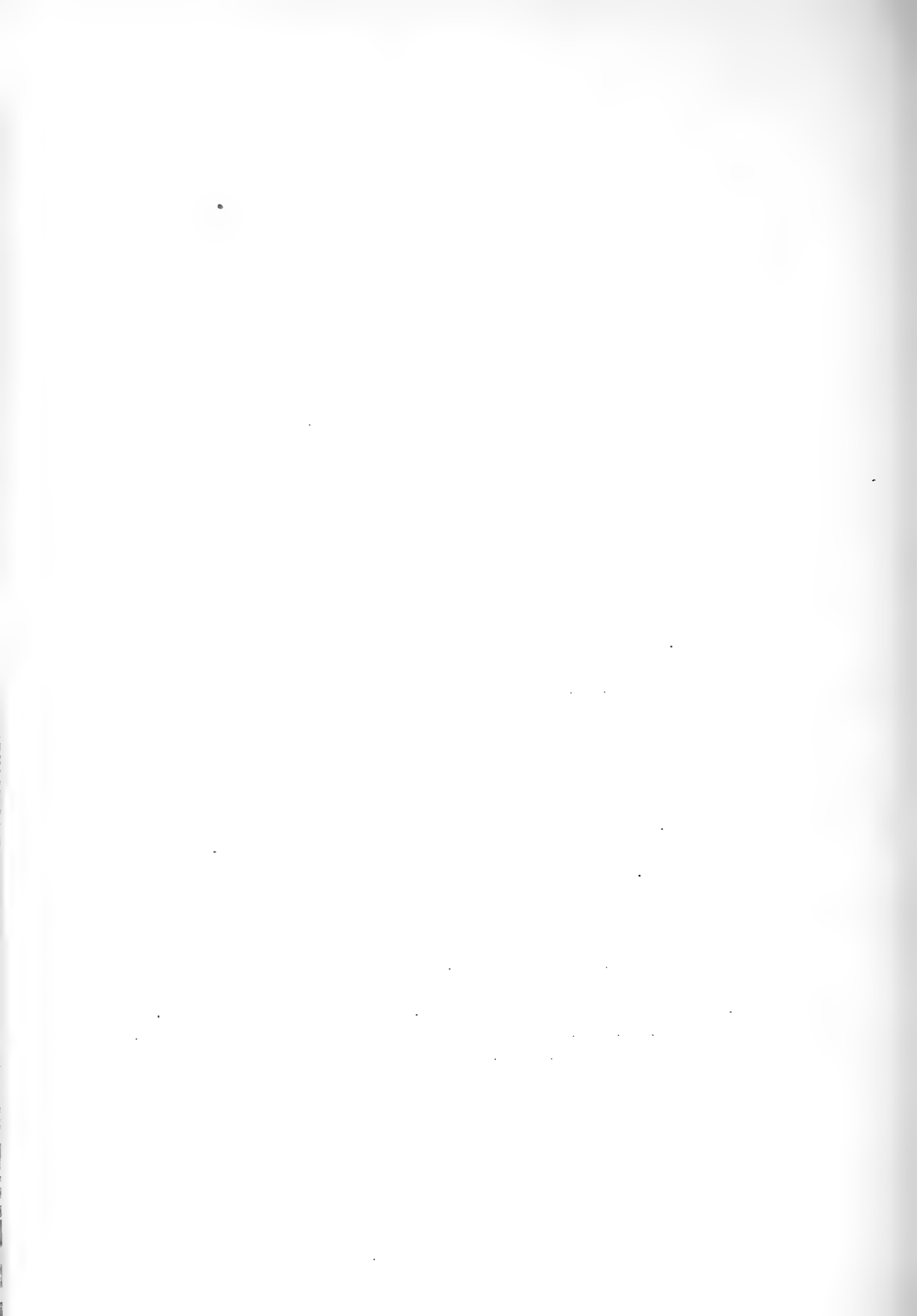
In the ♂ the eyes are smaller than in the ♀; the sixth ventral abdominal joint with rather deep emargination at tip, and before the emargination smoothed.

At dung and carrion. Distributed in North and Middle Europe, but everywhere in this country rather rare and singly.

2. O. murinus Linn.

(Linne Faun. Suec. 840; Erichs. Käf. Mk. Br. I, 433; Gen. Spec. Staph. 361; Kraatz Ins. D. II, 535; Thoms. Skand. Col. II, 142; Muls. et Rey Brévip. 1877, 86; Ganglb. Käf. M. II, 418).

From nebulosus, which it very much resembles in regard to color of the body, and felt-like, spotted vestiture, as well as the bronze-lustre of prothorax, it is easily separated by the following characters:



It is as a rule considerably smaller, narrower and of more even breadth; antennae are shorter, predominantly yellow, only toward tip brownish; mouth, mouth-parts, and legs black; eyes twice as long as temples; head and pronotum with rather coarse, very dense punctation; pronotum posteriorly with an abbreviated shiny middle-line, its sides not impressed, and behind middle scarcely incurved; elytra very little longer than pronotum, shorter than in nebulosus; abdomen feebly tapering; posterior margin of its fifth free dorsal joint with a fine, whitish cuticle^{*)}-margination. L. 10-15 mm.

At dung and carrion, preying on smaller insects. Distributed in Europe, North Asia, and North America, and not rare in this country.

68. Genus Staphylinus Linn.

(Linne Syst. Nat. Ed. X, 1758, 421; Ganglb. Käf. Mitteleurp. II, 419. - Staphylinus+Ocypus Kraatz Ins. D. II, 536, 560. - Trichoderma+Platydracus+Staphylinus+Jöerius Ocypus Tasgius Anodus Thoms. Skand. Col. II, 142 - 150. - Trichoderma+Staphylinus+Platydracus+Ocypus+Tasgius+Anodus Muls. et Rey Brévip. 1877, 89-181).

Body more or less elongated, of rather even breadth, haired, in some species the hair is felt-like, or (in Gen. Staphylinus L., Kraatz) adorned with golden glistening hair-spots, particularly on abdominal joints. The head varies in form: square, triangular, oviform, or rounded-off, with short, punctate neck, and larger or smaller, oval, obliquely placed eyes, and rather short antennae, which sometimes are slightly thickened outwardly, and again they may be of almost even thickness throughout, or as in the last four subgenera (Gen. Ocypus

^{*)}or membranous-

Kirby, Kraatz) feebly thinned toward the tip. Labrum is cleft at middle; mandibles robust, most often with one or more teeth on inner margin; in some species the last joint of labial palpi, in ♂ also the last joint of maxillary palpi feebly axe-formed (Fig. 112), otherwise rather cylindric.

Pronotum is anteriorly almost evenly truncated with rect- or obtuse-angular corners, erect or incurved sided, posteriorly rounded off; scutellum punctate and haired, occasionally velvet-haired; elytra most often longer than pronotum; abdomen of rather even breadth; legs rather robust, the middle and hind tibiae spiniferous, and with spurs at the end, fore-tarsi of both sexes strongly dilated, first joint of hind tarsi stretched, and as long as the two or three following joints. The mesosternum is without carina in the middle line, and the middle coxae are rather narrowly separated or almost contiguous.

Of those in Middle and North Europe distributed, and to this genus belonging species, 17 have heretofore been found in this country. They are mostly found on forest ground or at manure and carrion, and are as a whole voracious rove-beetles. The below mentioned first 7 species belong to the true genus Staphylinus L., the rest to Ocypus Kirby (cf. Kraatz); but as these two genera mutually by lack of distinctive, mainly separating features, are difficult to characterize with sufficient sharpness they are here treated together (cf. Ganglb. et.al.).

Key to Subgenera and Species.

1. Antennae slightly thickened outwardly, or of even thickness, their

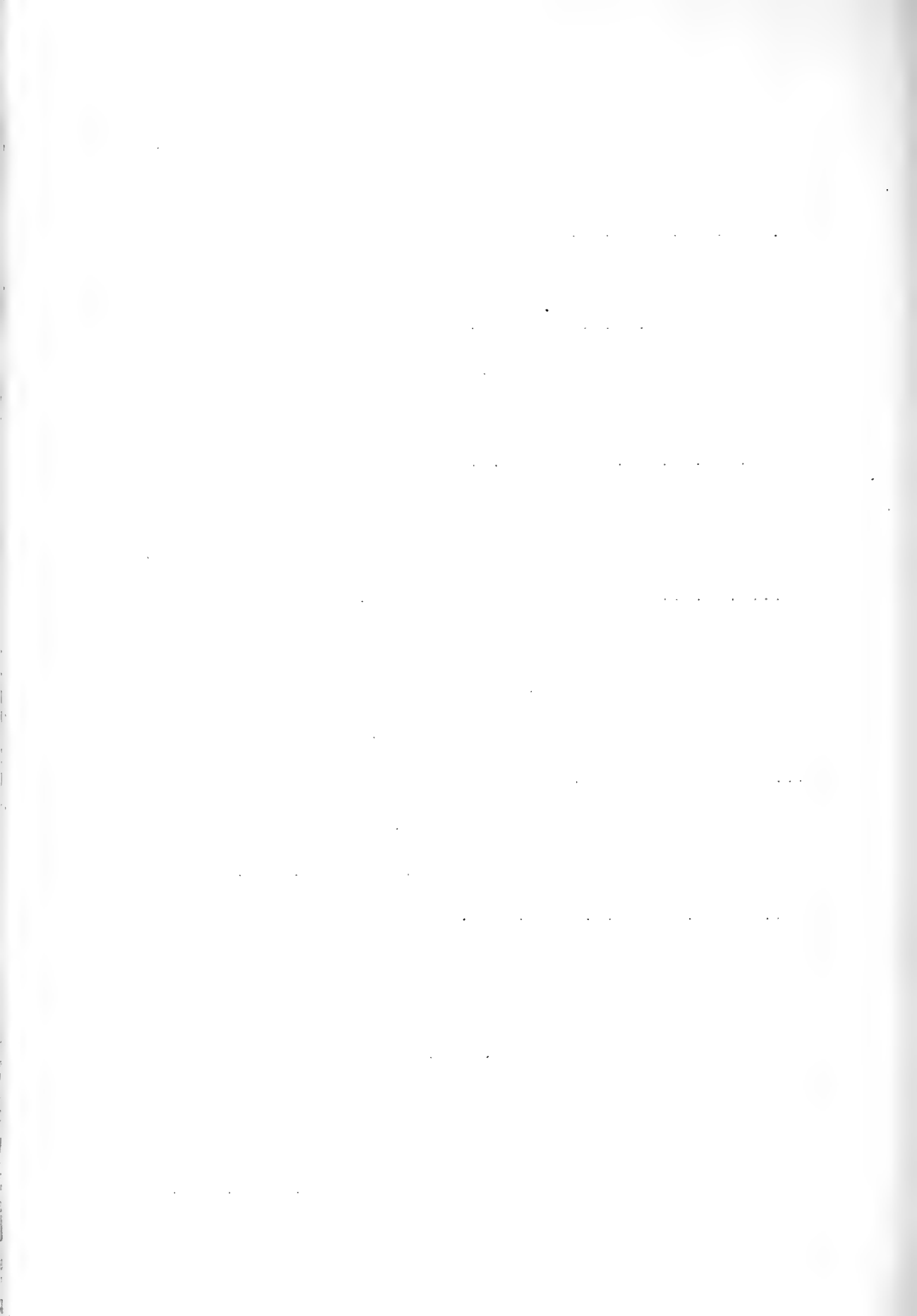
next-last joint most often more or less transverse. The abdomen (in our species) besides the darker hair-vestiture with golden glistening hair-spots, or transversal bands (Staphylinus Linne, Kraatz)..... 2.

- Antennae oftenest more slender, of even thickness or thinner outwardly, their next-last joint rarely feebly transverse, most often longer than broad. Abdomen black- or brownish-haired, not with golden-glistening hair-spots or transversal bands (Ocypus Kirby, Kraatz)..... 8.

2. Body with dense, spotted felt-like hair-vestiture, the abdomen ventrally with white hair-clothing. Antennal middle and next-last joints (6-10) rather strongly transverse: 1. subgenus Trichoderma Thoms. - the surface of head with polished pitted punctures, and with an ore-like-glistening polished spot on the forehead. L. 12-17 mm1. St. pubescens De Geer.

- Body with prostrate and finer hair-clothing 3.
- 3. Head broadest behind, triangular or oval-formed. Head and pronotum with coarse, navel-punctation: 2. Subgenus Platydracus Thoms..... 4.
- Head not broadest behind, rounded or transverse with rounded off corners. Head and pronotum with finer, very dense simple punctation..... 7.
- 4. Elytra greenish-blue. L. 14-17 mm.....2. St. fulvipes Scop.

- Elytra yellowish-red or brownish-red..... 5.
- 5. Head and pronotum black, black-haired. L. 12-15 mm.....
..... 3. St. stercorarius Oliv.
- Head and pronotum ore- or bronze-colored, brownish-yellow hair-
covering.....6.
- 6. Legs yellowish-red. L. 10-12 mm..... 4. St. latebricola Gravh.
- Legs rust-red with black femora and dark-brown tarsi. L. 12-17
mm..... 5 St. chalconcephalus F.
- 7. Head transverse with rounded off corners. Abdominal joints at
sides with golden hair-spots: 3. Subgenus Staphylinus s.str.
..... 7a.
- Head rounded, as long as broad. The abdomen at middle-line
with golden hair-spots: 4. Subgenus Abemus Rey.- Elytra
brownish-red, posteriorly yellowish-red. L. 17-20 mm
.....7a. St. fossor Scop.
- 7a. Scutellum black-haired. L. 17-22 mm.... 6. St. caesareus Cederh.
- Scutellum with yellow glistening hair. L.14-18 mm.....
.....7. St. erythropterus Linn.
- 8. The mandibles, or at least one of them, on the inner margin
with several robust teeth. The distal joint of labial pal-
pi cylindric or tapering..... 9.
- Mandibles on inner margin with a single, broad tooth or with-
out teeth. The distal joint of labial palpi, in the ♂
also that of maxillary palpi feebly axe-formed..... 15.



9. Temples considerably longer than the eyes: 5. Subgenus Jöerius
Thoms..... 10.
- Temples shorter or at most as long as eyes: 6. Subgenus Pseud-
ocypus Muls. et Rey12.
10. Elytra as long as pronotum. Species winged. Outer margin of
fore-tibiae spiniferous..... 11.
- Elytra shorter than pronotum. Species wingless. Outer margin
of fore-tibiae with only a few spines at tip. L. 15-20 mm.
.....10. St. similis Fabr.
11. Body entirely dull black. L. 24-30 mm...8. St. olens Mull.
- Head, pronotum, and elytra dark-blue. L. 18-20 mm
..... 9. St. ophtalmicus Scop.
12. Legs reddish-yellow. Species wingless. L. 12-14 mm.....
.....11. St. brunnipes Fabr.
- Legs darker, often with lighter tibiae or tarsi. Species
winged13.
13. Pronotum with scattered and irregular, finer or coarser punc-
tation, smooth at middle. L. 12-15 mm.:12. St. fuscatus Gravh.
- Pronotum with dense and uniform punctation, middle-line smooth.: 14..
14. The abdominal dark-haired surface with five light-haired long-
itudinal, narrow stripes. Elytra most often brownish-red,
rarely darker. The vestiture of head and pronotum very fine.
L. 14-17 mm..... 13. St. picipennis Fabr.
- The abdominal light-haired stripes oftenest less distinct.

- Elytra most often with bronze-lustre, darker, more rarely brownish-red. The hair-vestiture of head and pronotum more dense and distinct. L. 12-15 mm.: 14. St. aeneocephalus De Geer.
15. Mandibles with a broad tooth at middle (Fig. 112): 7. Subgenus Tasgius Thoms..... 16.
- Mandibles without tooth, long, narrow and sickle-shaped (Fig. 113):
8. Subgenus Ocypus Steph..... 17.
16. Elytra black; legs black with brownish tarsi. L. 14-18 mm....
- 15. St. ater Gravh.
- Elytra dark-blue, and legs yellowish-red L. 15-22 mm.....
- 16. St. pedator Gravh.
17. Temples longer than eyes. Legs black with brownish tarsi. L.
- 12-17 mm..... 17. St. globulifer Geoffr.
- Temples not longer than eyes. Legs most often reddish-yellow, rarely black with brownish tibiae and tarsi. L. 12-17 mm..
- 18. St. compressus Marsh.

1. Subgenus Trichoderma Thoms.

1. St. pubescens De Geer.

(De Geer Ins. IV, 17; Erichs. Käf. Mk. Br. I, 434; Gen. Spec. Steph. 372; Kraatz Ins. D. II, 546; Thoms. Skand. Col. II, 142; Muls. et Rey Brévip. 1877, 94; Ganglb. Käf. M. II, 425).

Not unlike Ontholestes nebulosus, but smaller, and easily separated from this by the obtuse-angular corners of pronotum anteriorly.

Black; the humeral margin of elytra, and often their suture, an-

terior margin of forehead, also labrum, and base of mandibles, antennal first 4-5 joints mostly ventral side, also a ring on the legs before tip of the femora yellowish-red. The dorsal side of the body entirely covered with a rough, more or less matted hair-vestiture, which on the head is yellowish, on pronotum and elytra darkly speckled yellowish-brown with many small, thinly haired dull spots, on the scutellum velvety-black, with yellowish middle line, and on the abdomen yellow-brownish, black-spotted, with a middle-row of golden-glistening, triangular hair-spots, which on each side is bounded by a velvety black spot. Metasternum and ventral side of abdomen covered with dense, chalky-white hair sprinkled with black.

The head, pronotum, and elytra are in the surface densely shagreened, and this therefore dull; head rather square with rounded off temple-corners, the dull ground with many, scattered shiny pitted punctures, and with a little, ore-glistening, polished spot in middle of forehead; antennae distinctly thickened outwardly, their middle- and next-last- (6-10) joints rather strongly transverse; pronotum considerably narrower than elytra and $1/3$ shorter than these, with coarse, scattered punctation and often with polished middle-line. L. 12-17 mm.

In the ♂ the sixth ventral abdominal joint incurved rounded at tip.

It is encountered mostly at manure, but also under leaves, is distributed everywhere in Europe, but is not frequent in this country, somewhat local.

2. Subgenus Platydracus Thoms.

2. St. fulvipes Scop.

(Scop. Ent. Carn. 99; Erichs. Käf. Mk. Br. I. 438; Gen. Spec. Staph. 382; Kraatz Ins. D. II, 545; Thoms. Skand. Col. II, 144; Muls. et Rey Brévip. 1877, 127; Ganglb. Käf. M. II, 426).

Distinguishable by the shape of head, and by the color.

Black, somewhat glistening, with fine, brownish hair; the next-last two abdominal joints at base with golden glistening hair; head, pronotum, and elytra darkly blue or greenish with metallic lustre; antennal base and tip, anterior margin of forehead, and maxillary palpi, and the legs reddish yellow.

The head is triangular, broadest behind the eyes, and with prominent temple-corners, as well as pronotum with smooth and dense navel-punctation; antennae only feebly thickened outwardly, their next-last joints scarcely transverse; pronotum almost as broad as elytra; these with particularly dense and very fine punctation, with modified shine; -----(Page 379)----- the abdomen with scattered and very fine punctation. L. 14-17 mm.

In the ♂ the sixth ventral abdominal joint with an acute incision at tip.

In damp woodland meadows under moss and grass and in old stubs; distributed in Europe, but rare everywhere in this country. (Hornbaek, Lyngby, Øbjerggaard; Aalholm; Silkeborg, Fanders, Skorping Holme and several other places).

3. St. stercorarius Oliv.

(Oliv. Ent. III, 42; Erichs. Käf. Mk. Br. I, 436; Gen. Spec.

Staph. 380; Kraatz Ins. D. II, 543; Thoms. Scand. Col. II, 143; Muls. et Rey Brévip. 1877, ;23; Ganglb. Käf. M. II, 427).

Besides by the shape of the head easily identified by the color.

Black, dull; head and pronotum sometimes with feeble ore-reflection, black-haired; scutellum with black velvety hair; elytra yellow-red or yellow haired; abdomen black-haired, its first four free joints on each side with a golden shiny hair-spot, and the next-last two joints together with the ventral joints at base with golden glistening hair-ed transversal bands; antennae brownish, their base and tip as well as maxillary palpi most often yellowish-red; legs reddish-yellow and yellow-haired, their femora occasionally dark.

The head is triangularly rounded, posteriorly as broad as pronotum, and together with same, with dense and robust navel-punctation; the antennae short and robust, slightly thickened outwardly, their middle and next-last joints distinctly transverse; pronotum as broad as elytra, and as long as broad, often with polished, anteriorly vanishing middle-line; elytra as long as pronotum, particularly densely and very finely punctate, and with a few scattered larger bristle-bearing punctures. l. 12-15 mm.

In the ♂ the sixth ventral abdominal joint with obtuse-angular emargination.

Distributed in Europe, in this country rather rare; mostly on sanded fields at manure.

4. St. latebricola Grav.

(Grav. Mon. 113; Erichs. Käf. Mk. Br. I, 437; Gen. Spec. Staph.

382; Kraatz Ins. D, II, 545; Thoms. Skand. Col. II, 143; Muls. et Rey Brévip. 1877, 125; Ganglb. Käf. M. II, 428).

From the preceding species, to which it is closely allied, it differs namely by the distinct metallic color of head and pronotum, and black antennae.

Black, dull; head and pronotum darkly bronze-colored, with brownish-yellow hair; elytra reddish yellowish-brown and reddish-yellow haired; scutellum with velvety black hair; abdomen black-haired, its first four free dorsal joints with three feebly golden-glistening hair-spots, separated by two blackish-brown haired spots, the two next-last dorsal joints and all ventral joints at base with golden feebly glistening haired transversal bands; antennae black, maxillary palpi and legs yellowish-red.

The head is broadest posteriorly, triangularly rounded, together with pronotum with rather coarse and dense navel-punctuation, coarser than in stercorarius; antennae feebly thickened outwardly; their next-last joints feebly transverse; pronotum posteriorly with short, polished middle-line; elytra fully as long and broad as pronotum, the surface densely shagreened, with fine and dense punctuation. L. 10-12 mm.

In the ♂ the sixth ventral abdominal joint rather strongly incurved at tip.

Rare or very rare; on forest-marsh- and heath-ground under moss and at the root of trees, occasionally also in company with Formica rufa, in and outside of the anthill. (Salling, Vejle; several places in Sjaelland; Fremersvold and Bursø in Lolland; Bornholm). Distrib-

uted in Europe.

5. St. chalconcephalus Fabr.

(Fabr. Syst. El. II, 593; Erichs. Käf. Mk. Br. I, 436; Gen. Spec. Staph. 381; Kraatz Ins. D. II, 544; Muls. et Rey Brévip. 1877, 120; Ganglb. Käf. M. II, 428).

Larger and broader than latebricola, from which it only differs in having black femora, and blackish-brown tarsi, posteriorly broader head and somewhat more slender antennae; head and pronotum with very dense and coarse navel-punctuation, denser and coarser than in the preceding species. L. 12-17 mm.

Distributed mainly in Middle Europe; here it has so far only been found in the woods near Silkeborg and Ry, and not, like Latebricola and the two preceding species, found in Sweden and Norway. Said to principally seek horse-manure there to prey on smaller insects.

3. Subgenus Staphylinus s. str. Thoms.

6. St. caecareus Cederh.

(Cederh. Faun. Ing. 1798, 335; Erichs. Käf. Mk. Br. I, 435; Gen. Spec. Staph. 378; Kraatz Ins. D. II, 548; Thoms. Skand. Col. II, 146; Muls. et Rey Brévip. 1877, 107; Ganglb. Käf. M. II, 429).

In comparison with the nearest preceding species distinguished by the square, posteriorly not broader head; compared with the following species, among other features recognized by the color of scutellum.

Black, dull; head and pronotum predominantly black-haired, but forehead, temples, neck, front-corners of pronotum, also its posterior margin with golden-yellow glistening hair; scutellum with black velvety hair; elytra with reddish yellowish-brown and reddish-yellow hair;

the abdomen with brownish-black hair, but the posterior margin of its first free dorsal joint, and a side-spot at base of the following dorsal joints, the base of all ventral joints, also metasternum anteriorly and posteriorly with golden-yellow glistening hair; antennae are often brownish toward the tip, but otherwheres, as well as maxillary palpi, and the legs yellowish-red.

The head is as broad as pronotum, broadly square with rounded off temple-corners, together with pronotum especially dense, and rather robustly punctated and like this most often with a narrow, smooth middle-line; ----- (Page 381) ----- antennae rather robust and longer than in the preceding species, only feebly thickened outwardly, their next-last joints however distinctly transverse; pronotum somewhat narrower than elytra, as long as broad, not narrowing posteriorly; elytra as long as pronotum, the surface extremely densely shagreened, and with especially dense and fine punctation, with single scattered larger bristle-bearing punctures. L. 17-22 mm.

In the ♂ the sixth ventral abdominal joint at tip is deeply obtusely angulated.

Distributed in all parts of our country, but not frequent; most often at manure on fields and roads. Europe, North America.

7. St. erythropterus Linn.

(Linne Syst. Nat. Ed. X, 1768, 422; Erichs. Käf. Mk. Br. I, 434; Gen. Spec. Staph. 377; Kraatz Ins. L. II, 547; Thoms. Skand. Col. II, 145; Muls. et Rey Brévip. 1877, 110; Langlb. Käf. M. II, 429).

Much like the preceding species, but as a rule narrower, and less

robust and with glistening golden-haired scutellum.

Black, dull; head and pronotum black-haired, the forehead anteriorly and around the neck with feebly glistening golden hair; scutellum likewise with golden glistening hair; elytra with reddish yellowish-brown, reddish-yellow hair; abdomen with black hair of feeble silky lustre, its first three, free dorsal joints on the sides most often with a feeble or not distinct, the three following joints both dorsally and ventrally with a distinct, golden glistening hair-spot at base on each side; antennae at middle pitch-black, their base and tip, maxillary palpi and legs yellowish-red.

The head is broad and square, broader than pronotum, head and pronotum both particularly dense and very finely punctate, somewhat finer than in the preceding species, like this also as a rule with a fine, smooth middle-line; antennae rather slender, their next-last joints (seen from one side) still distinctly transverse; pronotum narrower than elytra, a little longer than broad, slightly narrowing posteriorly; punctuation of elytra and abdomen same as in caesareus. L. 14-18 mm.

In the ♂ the sixth ventral abdominal joint is at tip rather deeply roundedly emarginate.

Distributed everywhere in Europe, and in this country more frequent than the preceding species; it occurs as well at manure on field ground as under leaves in woods, occasionally also in wet moss in water holes in marshes.

4. Subgenus Abemus Muls. et Rey.

7a. St. fossor Scop.

(Scop. Ann. Hist. Nat. V, 1772, 109; Erichs. Gen. Spec. Staph. 377; Kraatz Ins. D. II, 549; Muls. et Rey Brévip 1877, 246; Ganglb. Käf. M. II, 426.- fodiens Gravh. Mon. 116).

About of same size as caesareus, easily recognized by form of the head, and by the color.

Black, finely haired, dull; head, pronotum, and the foremost part of elytra brownish-red, head and sides of pronotum anteriorly often brownish-black; posterior half part of elytra or at least the hind corners, yellowish-red and dense yellow hair; scutellum black and densely black-haired; abdomen along middle, at base of joints with a row of golden yellow hair-spots, which on each side are bounded by black hair-spots, the sixth free dorsal joint at base with golden hair; antennae, maxillary palpi, and femora brownish-black, the distal joint of maxillary palpi reddish, tibiae and tarsi reddish or brownish yellow.

The head is rounded, as long as broad, together with pronotum with extremely dense scabrous punctation; antennae rather slender, not thickened, rather feebly thinned toward the tip, their middle and next-last joints not transverse; pronotum narrower than elytra, as long as broad, posteriorly narrowing and with deflexed side-margins; elytra only a little longer than pronotum, very densely shagreened; the abdomen tapering. L. 17-20 mm.

In the ♂ the sixth ventral abdominal joint with deep angular emargination.

Widely distributed in Middle Europe, found at Hamburg; according

to report from agent Hr. V. Nielsen, Nyraad, taken by him in great numbers on carcass of bird, in Knudskov near Vordingborg.

5. Subgenus Göerius Thoms.

8. St. olens Mull.

(Müll. Faun. Fridr. 1764, 23; Erichs. Käf. Mk. Br. I, 439; Gen. Spec. Staph. 405; Kraatz Ins. D. II, 553; Thoms. Skand. Col. II, 147; Muls et Rey Brévip. 1877, 134; Faglb. Käf. M. II, 430).

Among all our Staphylinidae this is the longest, and is besides also identified by the color.

Deeply black; on account of an extremely dense, very fine punctation and a very fine, blackish-brown hair-vestiture the head, pronotum, and elytra are quite dull; the abdomen is, due to a little less dense punctation semi-shiny; antennae brownish toward tip.

The head is broadly square, as broad as, or broader than pronotum; temples considerably longer than the eyes, and with rounded off temple-corners; antennae rather slender, from the middle distinctly thinned outwardly, their distal joint strongly emarginate; pronotum not narrowing posteriorly, about as long and broad as elytra. Fore-tibiae on outer side finely spiniferous. L. 24-30 mm. (Fig. 1 and 5).

In the ♂ the sixth ventral abdominal joint broadly emarginate at tip.

Distributed in Europe, and rather common here in all our woodland regions, under leaves and moss, more rare in treeless regions, heather ground or in dunes. - In its eggs a wasp parasitizes, Litus Krygeri Kier.; Hr. Teacher J. P. Kryger, Gentofte, reared from one single egg 70 specimens of this extremely small parasitic wasp (29. 7. 1907. - Entom. Medd. 1913. 380).

9. St. ophthalmicus Scop.

(Scop. Ent. Carn. 99; Ganglb. Käf. M. II, 431. - cyaneus Payk. Mon. Staph. 13; Erichs. Käf. Mk. Br. I, 440; Gen Spec. Staph. 408; Kraatz Ins. D. II, 555; Thoms. Skand. Col. II, 147; Muls. et Rey Brévip. 1877, 139).

Black, somewhat glistening, with fine black hair; head, pronotum, and elytra darkly blue or greenish-blue; antennae brownish toward the tip.

The head is square, as broad as pronotum and together with this very densely and finely punctate, and like same also most often with a feeble, or only suggested smooth middle-line; temples much longer than eyes, with rounded off temple-corners; antennae rather slender, feebly thinned outwardly; pronotum about as long as broad, and as broad and long as elytra, these with especially dense, fine punctation, somewhat dull; the abdomen with very dense and fine punctation; the outer margin of fore-tibiae with robust spines. L. 18-20 mm.

In the ♂ the sixth ventral abdominal joint feebly emarginate at tip.

Distributed in Europe, but rare or very rare in this country, on high heather or forest-ground. (Silkeborg, Skørping, Harboore; Tisvilde, Hornbaek, Bognaes; Bornholm).

10. St. similis Fabr.

(Fabr. Ent. Syst. I, 2, 521; Erichs. Käf. Mk. Br. I, 440; Gen. Spec. Staph. 408; Kraatz Ins. D. II, 556; Thoms. Skand. Col. II, 140; Muls et Rey Brévip. 1877, 142; Ganglb. Käf. M. II, 431).

Among the closely allied black species easily identified by the long temples and peculiar short elytra.

Black, with fine black hair, dull or feebly glistening; antennae toward the tip and the tarsi brownish.

Wingless. The head square, as broad as pronotum, together with this densely and rather strongly punctate, and like same with a fine, on pronotum through running, on the head anteriorly abbreviated, smooth middle-line; eyes much shorter than temples; antennae rather slender, from the middle outwardly distinctly thinned; pronotum of even breadth, as broad as elytra; these peculiarly short, and distinctly shorter than pronotum, with extremely dense, rather fine punctation, dull; abdomen of even breadth, with dense and very fine punctation; fore-tibiae on outer margin with only a single spine above the tip. L. 15-20 mm.

In the ♂ the sixth ventral abdominal joint with deep triangular incision.

Widely distributed in Europe and North Asia, in this country it is local and rare; under leaves, moss, stones and earth-knolls. (Lollana-Falster several places; Copenhagen, Vordingborg; Haderslev, Sønderborg).

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5. Subgenus Pseudocypus Muls. et Rey.

11. St. brunnipes Fabr.

(Fabr. Spec. Ins. I, 336; Erichs. Käf. Mk. Br. I, 441; Gen. Spec. Staph. 410; Kraatz Ins. D. II, 557; Thoms. Skand. Col. II, 148; Muls. et Rey Brévip. 1877, 153; Ganglb. Käf M. II, 433).

Recognized by proportionally short elytra and by the light color of the legs.

Black, finely haired; head and pronotum rather strongly glistening, elytra and abdomen dully glistening or dull; antennae pitch-brown, their base and tip, maxillary palpi, and legs reddish-yellow.

Wingless. The head rounded-square, as broad as pronotum, and like this strongly, but not densely punctate, and with a more or less distinct, anteriorly abbreviated, on pronotum most often through running, smooth middle-line; antennae rather long and slender; pronotum as long as broad, and not narrowed posteriorly; elytra considerably shorter and scarcely broader than pronotum, but densely and rather finely punctate; abdomen with especially fine, dense punctation, each of its three-four last dorsal joints at middle with two larger bristle-bearing punctures. L. 12-14 mm.

In the ♂ the sixth ventral abdominal joint feebly emarginate.

Distributed in North and Middle Europe, and everywhere not rare, in Denmark it is found as well on forest ground under leaves, as on heather hills, and high field ground, often in sand- and gravel-pits.

12. St. fuscatus Gravh.

(Gravh. Micr. 164; Erichs. Käf. Mk. Br. I, 441; Gen. Spec. Staph. 411; Kraatz Ins. D. II, 558; Thoms. Skand. Col. II, 148; Muls. et Rey Brévip. 1877, 159; Ganglb. Käf. M. II, 433).

Among closely allied species can be recognized by the irregular punctation of head and pronotum.

Black, head and pronotum polished glistening with bronze- or ore-like reflection; elytra darkly bronze-colored, together with abdomen with fine brownish hair, dull; fore-tibiae and tarsi reddish-brown.

The head is short-oval, a little narrower than pronotum, the temples with fine and dense punctation, elsewhere as well as pronotum with scattered and irregular, meaning fine and coarse intermingled punctation, and like pronotum with a rather broad, not distinctly bounded, on pronotum most noticeable, smooth middle-line; antennae rather short; pronotum as long as broad, of uniform breadth and about as broad and long as the extremely dense and very finely punctate elytra; the abdomen with particularly fine, and dense punctation, and on each dorsal joint with a transversal row of four, more or less distinct bristle-bearing punctures. L. 12-15 mm.

In the ♂ the sixth ventral abdominal joint is feebly emarginate.

Distributed in Europe, in this country local and as a whole rare, mostly on sandy or gravelly ground. (Lave Forest and several places in N. Sjaelland; Sundby Storskov, Loll.; Tarup, Fyen; Haderslev, Randers, Raebild). -----(Page 385) -----

13. St. picipennis Fabr.

(Fabr. Ent. Syst. I, 2, 521; Erichs. Käf. Mk. Br. I, 442; Gen. Spec. Staph. 412; Kraatz Ins. D. II, 559; Thoms. Skand. Col. II, 148; Muls. et Rey Brévip. 1877, 162; Janglb. Käf. M. II, 433).

A rather round species, within the subgenus distinguishable et.al. by the striped color pattern of abdomen.

Black, brown-haired; head and pronotum with bronze-lustre, sparsely haired and rather shiny; the elytra either brownish red, and often with light-haired longitudinal stripes, or darkly bronze-colored, as well as abdomen rather dull, the latter with five light brown-haired longitudinal stripes, the antennal tip, and the tarsi reddish-

brown.

The head is about as broad as pronotum, broadly square, with rounded off temple-corners, all over with rather fine, and particularly behind the eyes dense punctation, the vertex most often with smooth middle-line; antennae rather slender; pronotum as broad as elytra, and as long as broad, not narrowing posteriorly, rather finely and densely punctate, with a smooth middle-line, and on each side of this a row of larger punctures; elytra hardly as long as pronotum, with especially dense and very fine punctation, and with a larger bristle-bearing puncture on each side of scutellum, and one similar before the posterior margin; the abdomen with extremely dense and fine punctation and on each dorsal joint with a transversal row of 4 or 6 larger punctures. L. 14-17 mm.

In the ♂ the sixth ventral abdominal joint feebly emarginate.

Distributed everywhere in Europe, and rather common here, mostly on high and open ground, at manure and under stones. The larva is found at Holte (14. 6. 96) and in Bognaes (20. 6. 97) and reared. (E. Rosenberg).

14. St. aeneocephalus De Greer.

(De Greer Ins. IV, 22; Muls. et Rey Brévip. 1877, 164; Faglb. Käf. M. II, 434. - cupreus Fossi, Erichs. Käf. Mk. Br. I, 443; Gen Spec. Staph. 412; Kraatz Ins. D. II, 560; Thoms. Skand. Col. II, 149).

The difference between this species and picipennis is not considerable, and often difficult to definitely determine. Most often however aeneocephalus is smaller and narrower, elytra more frequently

bronze-colored, head and pronotum with denser and longer brown hair, more densely punctate, and the smooth middle-line of pronotum more sharply bounded, slightly convex; the head is narrower than pronotum, ovately rounded, with broadly rounded off temples; antennal base of-
tenest reddish-yellow, the abdominal light stripes often less distinct than in picipennis, but the large bristle-bearing punctures of the joints more numerous and more robust. L. 12-15 mm.

In the ♂ the sixth ventral abdominal joint very feebly emarginate at tip.

Under stones and at manure, or on high forest ground under leaves; distributed like the preceding species, but not as common in this country. ----- (Page 386)-----

6. Subgenus Tasgius Steph., Thoms.

15. St. ater Gravh.

(Gravh. Micr. 161; Erichs. Käf. Mk. Dr. I, 444; Gen. Spec. Staph. 416; Kraatz Ins. D. II, 562; Thoms. Skand. Col. II, 149; Muls. et Rey Brévip. 1877, 179; Ganglb. Käf. M. II, 435. - morio Sahlb. Ins. Fenn. I, 309).

An elongate, uniformly broad, somewhat flat and rather glistening species, which together with the following is distinguished in that the mandibles (Fig. 112) on the inner margin is armed with a single, broad and obtuse, yet robust tooth, and that the distal joint of the labial palpi in both sexes is feebly axe-shaped. In relation to the following species it is easily recognized by the color of elytra and legs.

Black; head and pronotum strongly glistening, with very scattered

and fine hair-vestiture; elytra and abdomen rather shiny, with short and rather dense black hair; antennal tip, maxillary palpi, and tarsi reddish-brown.

The head is square, with slightly roundedoff temple-corners, as broad as pronotum, and together with this with scattered, and rather robust punctation, with interspersed finer punctures, and with smooth middle-line; the antennae rather slender, not thickened outwardly, and their next-last joints not transverse; pronotum a little narrower and shorter than elytra, which together with abdomen is very densely, but not very finely punctate, and has a few single, scattered, larger bristle-bearing punctures. Posterior margin of the fifth free dorsal abdominal joint with a very fine, yet distinct, light cuticle-suture. L. 14-18 mm.

In the ♂ the distal joint of maxillary palpi is also feebly axe-shaped (Fig. 112) and the sixth ventral abdominal joint broadly emarginate at tip.

Distributed in Europe and North Asia; here it rare or local, more frequent in the islands than in Jutland, and most often found at the shore under rocks and seaweed. (Aarhus, Haderslev, Odense, Laesø, Korsør, Amager, Moen, Falster-Lolland, Langeland, Bornholm).

16. St. pedator Gravh.

(Gravh. Micr. 163; Erichs. Gen. Spec. Staph. 415; Kraatz Ins. D. II, 561; Thoms. Skand. Col. II, 149; Muls. et Rey Brévip. 1877, 175; Ganglb. Käf. M. II, 435).

From the preceding species, to which it closely allied, it is sep-

arated namely by a more convex form, darkly blue elytra, and yellowish-red, rarely brownish, antennae, maxillary palpi, and legs. Posterior margin of fifth free dorsal abdominal joint is lacking the usual fine, light cuticle-suture. L. 15-22 mm.

It is distributed throughout Europe, but much more frequent southward than northward (Ganglb.), is found singly in Finland and Gotland (Thoms.), but heretofore not found in this country.

7. Subgenus Ocypus Steph.

(Anodus Thoms., Muls.).

17. St. globulifer Fourcr.

(Fourcr. Ent. Par. 1785, I, 164; Ganglb. Käf. L. II, 436. - edentulus Block Verz. Ins. 1791, 115. - morio Gravh. Micr. 6; Erichs. Käf. Mk. Br. I, 444; Gen. Spec. Staph. 417; Kraatz Ins. D. II, 563; Thoms. Skand. Col. II, 150; Muls. et Rey Brévip. 1877, 184).

From the preceding species of this genus, this and the following species are mainly separated in that their long, slender, sickle-shaped mandibles have not a tooth on inner margin, or at most only a feeble suggestion of one. The distal joint of labial palpi (Fig. 113) and in the ♂ also the distal joint of maxillary palpi are feebly axe-shaped. In relation to the following species it is easy to identify globulifer by the color of the legs, but is otherwise in several regards a variable species.

Black, finely haired; head and pronotum somewhat glistening, elytra and abdomen dull; antennae toward the tip, and the tarsi brownish.

The body is slender and of even breadth, slightly depressed; the head square, temple-corners slightly rounded off, the temples rather long, head often broader than pronotum and together with this densely and rather robustly punctate, and with a smooth middle-line, which on the pronotum is sometimes only posteriorly distinct; antennae slender; pronotum slightly narrowed posteriorly, and a little narrower elytra, which are no longer than pronotum, and with dense, rather fine punctation; abdomen very finely and densely punctate, posterior margin of its fifth free dorsal joint with or without fine, white cuticle suture. L. 12-17 mm.

It varies considerably in size. Small specimens have an almost round head, a more uniformly broad pronotum, sometimes almost entirely red antennae, and proportionally longer elytra. - In the ♂ the sixth ventral abdominal joint obtuse-angularly emarginate.

Distributed everywhere in Europe, and rather common in this country, under leaves, moss and stones, also at lake-shores in alluvium.

Fig. 113. Head of Staphylinus (Ocypus) globulifer Fourcr. (morio Gravh.). Antennae removed. p.l. Labial palpi. p.max. Maxillary palpi.

18. St. compressus Marsh.

(Marsh. Ent. Brit. 503; Erichs. Gen. Spec. Staph. 418; Kraatz Ins. D. II, 564; Thoms. Skand. Col. II, 150; Muls. et Rey Brévip. 1877, 187; Ganglb. Käf. M. II, 436).

Closely allied to the preceding species, from which it mainly deviates in that the legs most often are light-colored, and by an all-over, though mostly on head and pronotum, much denser punctation.

Black; with rather dense, fine grayish-brown hair, dull; antennae brownish at middle, elsewhere as well as mouth-parts, and legs reddish-yellow; occasionally the fore-femora, or the middle- and hind-tibiae brownish; very rarely are the legs predominatingly dark (v. cerdo Er.). ----- (Page 388) -----

The head is scarcely broader than pronotum, transverse, with rather short temples, very densely and rather finely punctate; antennae rather slender; pronotum of even breadth, with especially dense and fine punctation, only posteriorly with a feebly suggested impunctate middle-line; elytra as long as pronotum, with extremely dense, but somewhat less fine punctation than the slender, very dense, and finely punctate abdomen. L. 12-17 mm.

In the ♂ the sixth ventral abdominal joint feebly incurved at tip.

Rare and local. In forests under leaves, but also at shores under seaweed. (Randers, Ry; Roskilde, Copenhagen, Lyngby; Lolland-Falster in several places). The form cerdo Er. is heretofore not found in this country.

69. Genus Philonthus Curt.

(Curtis Brit. Ent. VIII, 1836 pl. 610; Erichs. Käf. Mk. Br. I, 445; Gen. Spec. Staph. 426; Kraatz Ins. D. II, 565; Ganglb. Käf. M. II, 437. - Philonthus+Gefyribus+Gabrius Thoms. Skand. Col. II, 153, 166, 169; Muls. et Rey Brévip. 1877, 200, 386, 391).

A genus including numerous species, in relation to the nearest preceding genera recognized mainly by the undivided ligula, smooth neck, rather narrow fore-tibiae, and more often also by two conspicuous punctate rows on pronotum.

Body elongate, feebly fusiform or of rather even breadth; head and pronotum polished, and except for some erect bristles, also naked; scutellum, elytra and abdomen haired; the head varies in form, posteriorly rather strongly constricted, forming a short, impunctate neck, on the forehead as rule with a transversal row of four punctures, behind eyes and on the temples with more or less dense punctation; the eyes are not protruding, most often ordinarily large, sometimes small; temples and genae without marginal ridges; antennae moniliform or feebly thickened outwardly, their third joint ordinarily longer than the second, distal joint of maxillary palpi most often longer than the next-last, and somewhat fusiformly more rarely conically tapering; the last joint of labial palpi most often as thick as the next-last (Fig. 114. Subgenus Philonthus s. str.) more rarely strikingly finer and narrower (Fig. 115. Subgenus fabrius). The ligula undivided, rounded off at tip.

Fig. 114. Labial palpi of Philonthus nitidus Fabr. (Subgenus Philonthus s. str.).

Fig. 115. Labial palpi of Philonthus nigritulus Gravh. (Subgenus fabrius Steph.).

Pronotum is most often narrower than elytra, either of rather even breadth or narrowing a little anteriorly, with a few exceptions the dorsum is at middle adorned with two longitudinal rows of rather large punctures, the number of which in our species may vary from 4-12 in each row, outside of these on the side-planes also with several (4-6) partly row-forming, more rarely numerous scattered punctures, but otherwheres not punctate, the surface oftenest very finely

reticulate. Scutellum is proportionally large, triangular, punctate; elytra as long as or a little longer than pronotum; the abdomen posteriorly more or less tapering, its first three free dorsal joints often slightly transversally depressed at base, whereby there in some species is formed a fine transversal ridge with an angulate, acute projection on the middle about like a transversally placed brace (P). The fore-tibiae are rather narrow, feebly thickened toward the tip, often finely spiniferous, the others always spiniferous; fore-tarsi either simple or their first three joints dilated; hind-tarsal first joint more or less produced, longer than or about as long as the claw joint. - In the ♂ the head is often broader and more square than in the ♀, or the fore-tarsi are dilated, or more strongly dilated than in the ♀; the sixth ventral abdominal joint is at tip more or less strongly angulately incised or emarginate.

In Middle and North Europe more than 70 species are found, in this country about 50. They mostly seek rotting plant- or animal-fragments, manure and fungi, where they hunt smaller insects. Most of the species are not very particular in choice of ground, and can be encountered almost anywhere, a few prefer hollow trees or live under bark of insect-infested trunks and stubs.

Our species are divided into two subgenera, and the largest of these, Philonthus s. str., by the number of punctures in each of the punctate rows of pronotum furthermore in 5 series.--In Erichson and Kraatz the genus Philonthus includes also the separated and follow-

ing small genera Cafius, Remus, Actobius, and Bisnius.

Key to Subgenera, Series and Species.

1. Last joint of labial palpi not narrow, hardly narrower than the next-last (Fig. 114). Head rounded or rounded-square. Temples as a rule not or only a little longer than the eyes:
 1. Subgenus Philonthus s. str..... 2.
- Last joint of labial palpi distinctly narrower and more slender than the next-last (Fig. 115). Head elongate-square with almost parallel sides, or elongate-oval. Temples twice as long as the small or very small eyes: 2. Subgenus Gabrius Steph. (Fig. 117)..... 43.
2. Pronotum smooth, without punctate rows at middle ..1st series 4.
 - Pronotum with two punctate rows at middle 3.
3. Each punctate row consists of 4 punctures.....2nd series 6.
 - Each punctate row consists of 5 punctures.....3rd series 24.
 - Each punctate row consists of 6 punctures.....4th series 37.
 - Each punctate row consists of more than 6 punctures (8-12), somewhat irregularly arranged and with many or numerous punctures at the sides 5th series 42.
4. Fore-tibiae distinctly curved. Head and pronotum black with metallic shine. L. 12-14 mm.....1. Ph. splendens Fabr.
 - Fore-tibiae straight or almost straight. Head and pronotum with greenish or bluish metal-shine..... 5.
5. Head rounded-transverse; pronotum not narrowing anteriorly.

- L. 9-12 mm 2. Ph. intermedius Boisd.
- Head oval; pronotum narrowed anteriorly. L. 9-11 mm
..... 3. Ph. laminatus Creutz.
6. First joint of hind-tarsi longer than the last, as long as the
three middle joints together 7.
- First joint of hind-tarsi scarcely longer than the last, shorter
than the three middle joints together..... 19.
7. Head rounded off squarely, as broad as long or broader, in the ♂
occasionally broader than pronotum..... 8.
- Head oval or short oval, most often longer than broad, with
entirely rounded off temple-corners, in both sexes narrower
than pronotum 13.

8. The abdominal second and third free dorsal joint across the
base with a ridge, which at the middle has an acute angular
projection (∩)..... 9.
- This ridge is straight, without projection at middle..... 12.
9. Elytra with dense punctation, each with two outstanding (erect)
long bristles on the side..... 10.
- Elytra with scattered punctation, with only one bristle on the
side behind the humerus, greenish or bluish metallic shine.
L. 7-9 mm..... 9. Ph. atratus Gravh.
10. Abdomen densely punctate. Fore-tarsi of ♂ strongly dilated.
Elytra yellow-haired. L. 11-13 mm..... 5. Ph. aeneus Rossi.

- Abdomen, especially at middle, less densely punctate. Fore-tarsi of ♂ feebly dilated. Elytra with black or dark hair..... 11.
- 11. Pronotum distinctly impressed on sides. Antennal distal joints (6-10) rather strongly transverse. L. 10-12 mm.....
..... 6. Ph. chalceus Steph.
- Pronotal sides scarcely impressed. Antennal distal joints hardly transverse. L. 10-12 mm.....7. Ph. addendus Sharp.
- 12. Elytra darkly bronze-glistening. L. 9-11 mm...8. Ph. carbonarius Gyllh.
- Elytra red. L. 11-13 mm..... 4. Ph. nitidus Fabr.
- 13. Legs black or pitch-black, tibiae and tarsi sometimes brownish..14.
- Legs reddish-yellow.....17.
- 14. Elytra entirely dull, densely shagreened. L. 11-13 mm.....
.....10. Ph. decorus Gravh.
- Elytra somewhat glistening..... 15.
- 15. Antennal first joint on ventral side yellow. L. 9-11 mm...
..... 11. Ph. fuscipennis Mannh.
- Antennal first joint entirely black.....16.
- 16. Head and pronotum darkly bronze-glistening with greenish reflection. Elytra with dense scabrous punctation. L. 9-11 mm.
..... 12. Ph. lucens Er.
- Head and pronotum black, polished, without metallic reflection. L. 6-7.5 mm.....13. Ph. varius Gyllh.
- 17. Pronotal sides broadly yellowish-red. L. 8-10 mm.....
..... 14. Ph. marginatus Str.

- Pronotum unicolorous black or brownish..... 18.
- 18. Elytra yellowish-red, very rarely dark or bronze-glistening.
L. 6-7 mm..... 15. Ph. lepidus Gravh.
- Elytra black, often with feeble metallic shine. L. 4-5 mm..
..... 16. Ph. nitidulus Gravh.
- 19. The two middle punctures in the transversal row of forehead are
distinctly farther removed from each other than from the
punctures at inner margin of the eye..... 20.
- All punctures in the transversal row of forehead are about even-
ly removed from each other..... 22.
- 20. Pronotum distinctly narrowing anteriorly. Head oblong-oval,
narrow. L. 5-6 mm..... 17. Ph. albipes Gravh.
- Pronotum of almost even breadth. Head square with rounded off
corners or oblong square.....21.
- 21. Temples longer than eyes. L. 6-7 mm....18. Ph. fimetarius Gravh.
- Temples shorter than eyes. L. 7-8 mm...19. Ph. umbratilis Gravh.
- 22. Elytra with fine and dense punctation, as well as pronotum
most often brownish-red. L. 5-7 mm...22. Ph. fuscus Gravh.
- Elytra rather coarsely punctate, bronze-glistening.....23.
- 23. The head of ♂ large, broader than pronotum, of ♀ as broad as this.
Elytra rather densely punctate. L. 7-9 mm.....
.....20. Ph. cephalotes Gravh.
- The head of ♂ as broad as pronotum, of ♀ narrower than this.
Elytra with coarser and more scattered punctation. L. 5-6
mm.....21. Ph. sordidus Gravh.

24. First joint of hind-tarsi considerably longer than the last...25.
- First joint of hind-tarsi not, or only inconsiderably longer
than the last..... 34.
25. Head rounded-square.....26
- Head oval, without temple-corners31.
26. Fore-tibiae strongly spiniferous27.
- Fore-tibiae not, or only feebly spiniferous.....29.
27. Abdominal second and third free dorsal joints across the base
with a ridge, which at middle is distinctly angulate (w)..28.
- This ridge is straight or at middle only indistinctly angulate.
L. 5-7 mm.....25. Ph. concinnus Gravh.

28. Elytra black with greenish metallic reflection. L. 7-8.5 mm....
..... 23. Ph. ebeninus Gravh.
- Elytra red, at base occasionally dark. L. 7-8 mm.....
.....24. Ph. coruscus Gravh.
29. Elytra black with a red common^{*)} spot on the suture, and a smaller, red spot between the suture and humerus. L. 7-8 mm...
.....29. Ph. sanguinolentus Gravh.
- Elytra unicolorous black or brownish..... 30.
30. Fore-tarsi in both sexes strongly dilated. Elytra black with
ore-like reflection. L. 7-8 mm.....27. Ph. immundus Gyllh.
- Fore-tarsi in ♂ rather strongly, in the ♀ feebly dilated.
Elytra black or brownish without metallic reflection. L. 4-5.5
mm.....28. Ph. debilis Gravh.

31. Antennal first joint, at least on ventral side, also fore-coxae
brownish-yellow. Elytra ordinarily entirely black. L. 7-8 mm.
..... 30. Ph. longicornis Steph.
- Antennae entirely black..... 32.
32. Fore-coxae, seen from side, black or blackish-brown. Elytra
with a red spot toward the suture-corner. L. 6-7 mm.....
..... 31. Ph. cruentatus Gmel.
- Fore-coxae, seen from side, brownish-yellow..... 33.
33. Temples somewhat longer than the eyes. Elytra black, ordinarily
each with a red, but often feeble longitudinal spot on mid-
dle. L. 5-7 mm 32. Ph. varians Payk.
- Temples not longer than eyes. Elytra black with very feeble
ore-like lustre, their posterior margin brownish. L. 5-6 mm.
..... 33. Ph. agilis Gravh.
34. Legs and antennae, and the whole body entirely black. L. 7-8
mm..... 26. Ph. corvinus Er.
- Legs brownish or reddish yellow..... 35.
35. Temples of the head more or less rounded off..... 36.
- Temples of the head almost rectangular. Elytra pitch-brown,
their suture, sides and posterior margin reddish-yellow.
L. 5 mm..... 34. Ph. discoideus Gravh.
36. Elytra not longer than pronotum, pitch-black or pitch-brown
without distinct bronze-reflection. L. 6 mm
..... 35. Ph. ventralis Gravh.

- Elytra a little longer than pronotum, either black, and then most often with greenish metallic reflection, or the hindmost half part red or almost entirely red, and only at the base black.
L. 6-7 mm..... 36. Ph. quisquiliarius Gyllh.
- 37. Elytra black, with or without metallic reflexion 38.
- Elytra yellowish-red..... 41.
- 38. Abdomen less densely and finely punctate; elytra glistening....39.
- Abdomen especially densely and finely punctate; elytra dull or dully shining.....40.
- 39. Legs yellow. Elytra with greenish metallic reflection. L. 7-9 mm.....37. Ph. fumarius Gravh.
- Legs black. Elytra without metallic reflection. L. 7-8 mm...
..... 38. Ph. nigrita Gravh.
- 40. Legs reddish-yellow. L. 6-7 mm.....39. Ph. micans Gravh.
- Legs pitch-brown, with lighter knees and tarsi, or reddish-brown. L. 6-7 mm..... 40. Ph. virgo Gravh.
- 41. The first three antennal joints yellow, rarely brownish-red.
L. 6-7 mm.....41. Ph. fulvipes Fabr.
- Only the first antennal joint yellow. L. 6-7 mm.....
.....42. Ph. salinus Kiesw.
- 42. Pronotal sides with 8-12 scattered punctures. L. 8-9.5 mm..
..... 43. Ph. puella Nordm.
- Pronotal sides with numerous (30-40), rather densely placed punctures. L. 8-10 mm.....44. Ph. punctus Gravh.

43. Pronotal punctate rows each with 5 punctures.....44.
- Pronotal punctate rows each with 6 punctures.....46.
44. Elytra shorter than pronotum; this feebly narrowing anteriorly.
L. 6-7 mm..... 45. Ph. vernalis Gravh.
- Elytra not shorter than pronotum, this of even breadth or feebly narrowing posteriorly.....45.
45. Pronotum feebly narrowing posteriorly. L. 5 mm
..... 46. Ph. splendidulus Gravh.
- Pronotum of even breadth. L. 3 mm..... 47. Ph. thermarum Aube.
46. Pronotum distinctly narrowing anteriorly. L. 5-6 mm.....
..... 48. Ph. exiguus Nordm.
- Pronotum anteriorly scarcely narrowing or of even breadth....47.

47. Elytra a little longer than pronotum. L. 4-5 mm
.....49. Ph. nigritulus Gravh.
- Elytra shorter, or as long as pronotum. The head, especially in the ♂, proportionally large. L. 4.5-5.5 mm.....
.....50. Ph. trossulus Nordm.

1. Subgenus Philonthus s. str.

1st Series: Pronotum at Middle without Punctate Rows.

1. Ph. splendens Fabr.

(Fabr. Ent. Syst. I, 2. 523; Erichs. Käf. Mk. Br. I, 447; Gen. Spec. Staph. 429; Kraatz Ins. D. II, 569; Thoms. Skand. Col. II, 155; Muls. et Rey Brévip. 1877, 203; Ganglb. Käf. M. II, 442).

One of the largest species of this genus, easily identified, inter

alia, by the characters of pronotum and fore-tibiae.

Black; Head and pronotum specular, with metallic lustre; elytra with bronze-lustre, together with the abdomen rather finely haired.

The head is large, broadly square, in the ♂ broader than pronotum, in the ♀ as broad as this, behind the eyes with a few coarse punctures, on the temples posteriorly with many, finer bristle-bearing punctures; pronotum feebly narrowing posteriorly, narrower than elytra, its sides behind middle rather strongly incurved, the dorsum at fore-margin and on sides with a few scattered punctures, otherwheres entirely smooth; elytra with dense and robust, abdomen with rather fine and more scattered punctation; fore-tibiae feebly, yet distinctly curved. L. 12-14 mm.

In the ♂ the fore-tarsi are feebly, yet a little more strongly dilated than in the ♀; the abdominal fifth ventral joint at middle of posterior margin obtuse-angulately incurved, the sixth with sharp, deep emargination.

Distributed, and not rare at manure, carrion, and under rotting plants. Europe, North Asia.

2. Ph. intermedius Boisd.

(Boisd. Lac. Faun. Ent. Paris I, 388; Erichs. Käf. Mk. Br. I, 447; Gen. Spec. Staph. 429; Kraatz Ins. D. II, 570; Thoms. Skand. Col. II, 155; Muls. et Rey Brévip. 1877, 207; Ganglb. Käf. M. II, 442).

Somewhat smaller than splendens, and with approaches both to this and the following species.

Black; head and pronotum greenish metallic glistening, specularly; elytra bronze-colored, together with abdomen haired, glistening.

The head is smaller than in splendens, in the ♂ as broad as pronotum, in the ♀ narrower and more rounded; pronotum seen from above, of even breadth, its sides behind middle only feebly incurved. Elytra and abdomen with somewhat finer punctation than in the preceding, and less dense than in the following species; fore-tibiae almost straight. L. 9-12 mm.

In the ♂ the fore-tarsi are rather strongly dilated; the abdominal fourth ventral joint posteriorly with a plate-formed prolongation, and covers the greater part of the fifth, the sixth is deeply emarginate at tip.

Distributed in Europe, but is rare in our country. It is found at manure, rotten plants, and in alluvium, also on heath-land hills under reindeer moss and heather.

3. Ph. laminatus Creutz.

(Creutz Ent. Vers. 1799, 128; Erichs. Käf. Mk. Br. I, 446; Gen. Spec. Staph. 430; Kraatz Ins. D. II, 570; Thoms. Skand. Col. II, 155; Muls. et Rey Brévip. 1877, 206; Ganglb. Käf. M. II, 443).

From intermedius, to which it is closely allied and namely resembles in regard to sex-characters of the ♂, it is easily separated by the following characteristics:

The elytra are bluish green, with metallic lustre, black-haired; the body anteriorly narrowing; the head in both sexes narrower than pronotum, rounded-oval; pronotum distinctly narrowing anteriorly, its sides behind middle only feebly, or not incurved; elytra with dense and rather fine, abdomen with fine and rather dense punctation.

Fore-tarsi in both sexes slightly dilated. L. 9-11 mm.

Distributed in Europe, and rather common here, at manure, also decaying animal- and plant-fragments, also in alluvium, and on heaths under lichen and heather.

2nd Series: Pronotum with 4 Punctures in each Dorsal Row.

4. Ph. nitidus Fabr.

(Fabr. Mant. Ins. I, 220; Erichs. Käf. Mk. Br. I, 448; Gen. Spec. Staph. 435; Knecht Ins. D. II, 576; Thoms. Skand. Col. II, 156; Muls. et Rey Brévip. 1877, 220; Ganglb. Käf. M. II, 443).

Within the second series easily identified by the conspicuous red color of the elytra.

Glistening black; elytra brownish-red, with brownish-yellow hair, the abdomen with darker hair.

The head (Fig. 116) is in the ♂ broadly square, and broader than pronotum, in the ♀ rounded-square, and a little narrower than pronotum, its temples densely and coarsely punctate; pronotum a little narrower than elytra with posteriorly feebly incurved side-margins, with 4 punctures in each dorsal row, and outside of these with 8-10 robust, partly row-formed side-punctures. Elytra with dense and rather robust, abdomen with less dense and finer punctation; the tarsi in both sexes only very feebly dilated. L. 11-13 mm.

In the ♂ the abdominal sixth dorsal joint at tip with an angulate incision.

Fig. 116. Philonthus nitidus Fabr.

Rather rare and local; on open field-ground at manure, but also in plant-fertilizer. It is distributed in North and Middle Europe, and like a closely allied species with blue elytra, Ph. cyanipennis Fabr., most frequent in mountain regions. The larva is described and illustrated by J. Schiödte Nat. Tiasskr. 1864-5, 199. T. IX.

5. Ph. aeneus Rossi.

(Rossi Faun. Etrus. 1790, I, 249; Brichs. Käf. Mk. Br. I, 449; Gen. Spec. Staph. 437; Kraatz Ins. D. II, 578; Thoms Skand. Col. II, 156; Muls. et Rey Brévip. 1877, 226; Ganglb. Käf. M. II, 444).

In regard to the following, closely allied species particularly distinguishable by the dense punctation of the abdomen, and by the strongly dilated fore-tarsi.

black, glistening; head and pronotum with feeble ore- or bronze-reflection; elytra darkly bronze-colored and together with abdomen with brownish hair.

The head in ♂ is broadly square and often broader than pronotum, in the ♀ it is more rounded off and a little narrower than pronotum, in both with coarse punctures behind the eyes, and rather densely punctate temples, between eyes with a transversal row of 4 punctures, of which the two middle ones are only a little farther from each other than the distance from the outer punctures; the antennal outer joints (6-10) rather strongly transverse. Pronotum is on the sides slightly, yet distinctly impressed, and posteriorly with slightly incurved side-margins, on the dorsum with 4 punctures in each dorsal row, and 4-5 scattered side-punctures; elytra with dense and rather

robust punctation, somewhat more robust than the likewise densely punctate abdomen, on which the transversal impression at base of second and third free dorsal joints form a fine transversal ridge which at middle is distinctly acute angulate. L. 11-13 mm.

In the ♂ the fore-tarsi is strongly dilated, and the abdominal sixth ventral joint at tip with an acute angular incision.

Common in the northern parts of the world, everywhere at manure, rotting plants and carrion. The larva is found in numbers under decayed plants in Damhusmosen (moor) at Copenhagen, and reared by Sand. W. Schlick.

6. Ph. chaldeus Steph.

(Steph. Ill. Brit. V, 227; Ganglb. Käf. M. II, 444. - carbonarius Erichs. Käf. Mk. Br. I, 448; Gen. Spec. Staph. 437; Kraatz Ins. D. II, 577; Muls. et Rey Brévip. 1877, 229. - proximus Kr. 1859. - succicola Thoms. Skand. Col. II, 157).

Very closely allied to aeneus, from which it however is easily separated by the following characteristics:

The elytra are greenish or bluish darkly bronze-colored, and together with the abdomen black-haired; the antennal distal joint often brownish. The head in the ♂ is not broader than pronotum, in the ♀ narrower, its temples rather sparsely punctate; the antennal outer joints (6-10) strongly transverse, abdomen less densely punctate than that of aeneus. L. 10-12 mm.

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In the ♂ the fore-tarsi only feebly dilated; the abdominal sixth ventral joint same as in the preceding species with deep acute angulate incision.

Distributed in Europe and Asia, and not rare in Denmark, often numerous at outflowing tree sap, less numerous at fungi, excrements and in plant-fertilizer= compost.

7. Ph. addendus Sharp.

(Sharp. Proc. Ent. Soc. Lond. V, 1867, 440; Muls. et Rey Brévip. 1877, 232; Ganglb. Käf. M. II, 445).

Closely allied to both the preceding species, and like these with a little angulate tip on the middle of the transversal ridge of the depressed base of the abdominal second and third free dorsal joint.

Glistening black; elytra with brass- or bronze-lustre, occasionally with greenish reflection, as well as the abdomen with blackish-brown hair.

The head in the ♂ as broad as, in the ♀ narrower than pronotum, rounded off squarely, with coarsely and densely punctate temples; the antennae rather slender, more slender than in aeneus and chalceus, their outer joints (6-10 scarcely transverse; pronotal sides indistinctly or very feebly impressed, the number and position of its punctures same as in aeneus; elytra densely and rather finely punctate; abdomen finely and rather densely punctate, less dense than in aeneus. L. 10-12 mm.

In the ♂ the fore-tarsi only feebly dilated; abdominal sixth ventral joint at tip with an obtuse angulate incision.

Distributed in North and Middle Europe, but everywhere very rare, possibly often mixed up with one of the two preceding species; heretofore it has here only been found at Odense under rotting plants (6. 1896. N. P. Jørgensen).

8. Ph. carbonarius Gyllh.

(Gyllh. Ins. Suec. II, 319; Thoms. Skand. Col. II, 157; Ganglb. Käf. M. II, 445.- tenuicornis Muls. et Rey Brévip. 1877, 237).

From the closely allied, three preceding species it differs mainly in, that the transversal ridge on base of the abdominal second and third free dorsal joints is rectilinear without the angulate tip at middle, as in these. Otherwise it mostly resembles chalceus Steph. (carbonarius Er.)

Black, glistening; head and pronotum with a darkly, feebly greenish, the elytra more often with a stronger greenish bronze-reflection; these together with abdomen finely blackhaired.

The head in the ♂ is hardly as broad as pronotum, in the ♀ still narrower, in both the temples are rounded off, and with scattered punctation, and between the eyes with a transversal punctate row of four punctures, of which the middle punctures are placed almost twice as far from each other as from the side punctures; antennae rather slender, only feebly thickened outwardly, their outer joints (6-10) scarcely transverse; pronotum (viewed from above) slightly narrowing forwardly, without distinct impressions on sides, the dorsum with 4 punctures in each dorsal row, --- (Page 396) --- and 4-6 side punctures, the surface extremely finely transversally aciculate and in certain directions feebly irised; elytra with rather dense, the abdomen with much finer, scattered punctation, the fine transversal ridge of the first free dorsal joints in the depression on base rectilinear. L. 9-11 mm.

In the ♂ the abdominal sixth ventral joint at tip obtuse angular-

ly incised.

Distributed and not rare at manure, decaying plants, in fungi, under leaves and moss, also in alluvium. North and Middle Europe.

9. Ph. atratus Gravh.

(Gravh. Micr. 21; Erichs. Käf. Mk. Br. I, 450; Gen Spec. Staph. 439; Kraatz Ins. D. II, 586; Thoms. Skand. Col. II, 158; Muls et Fey Brévip. 1877, 241; Ganglb. Käf. M. II, 446. - lucens Mannh. Brach. 28).

Smaller and narrower than the four preceding, closely allied species, recognized particularly by the scattered punctation of the elytra.

Black, strongly glistening; head and pronotum specular with ore-like reflection; elytra with greenish or bluish metallic lustre, together with the abdomen darkly haired.

The head rounded-square, in both sexes narrower than pronotum, between the eyes with a couple of punctures on each side in a transversal row, behind the eyes with scattered coarse punctures, and with more finely punctate temples; antennae rather slender, their next-last joints hardly transverse; pronotum a little narrower than elytra, with strongly deflected fore-corners, and posteriorly slightly incurved sides, the dorsum with four punctures in each dorsal row, and with five side-punctures; elytra with rather fine, and peculiarly scattered punctation; the abdomen finely and not densely punctate, its first three free dorsal joints at middle of the transversal depression on base, with a small angulate tip; fore-tarsi in both sexes dilated. L. 7-9 mm.

In the ♂ the abdominal sixth ventral joint with obtuse angulate

incision at tip.

Distributed in Europe, North Asia and North America, but is rare in this country; on damp ground under moss and leaves, also in alluvium at lake shores. The larva is described by J. Schiødte: Nat. Tidskr. 1864-65. 200, and is placed at Zool. Museum, Copenhagen.

10. Ph. decorus Gravh.

(Gravh. Micr. 19; Erichs. Käf. Mk. Br. I, 451; Gen. Spec. Staph. 442; Kraatz Ins. D. II, 580; Thoms. Skand. Col. II, 163; Muls. et Rey Brévip. 1877, 247; Ganglb. Käf. M. II, 447).

Among closely allied species with oval head easily identified by its size and by the densely shagreened, dull elytra.

Fusiform, black; head and pronotum darkly bronze-colored, modulated silky shine; the elytra lighter bronze-colored, dull, together with the dully shining abdomen very finely haired; maxillary palpi, tibiae, and tarsi often brownish.

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The head is oval, in both sexes narrower than pronotum; the antennae long and slender; pronotum narrowing anteriorly, longer than broad, with 4 punctures in each dorsal row, and with 5-6 side-punctures, its surface and also surface of the head especially finely shagreened and thereby with modelated shine; elytra with rather dense and very fine punctation and very densely shagreened; abdomen with dense and fine punctation; fore-tarsi in both sexes simple.

L. 11-13 mm.

In the ♂ the abdominal sixth ventral joint at tip has an acute incision with cuticular margins.

Distributed in Middle and North Europe; very frequent everywhere here on damp forest ground under leaves, also at fungi, under decayed plants and in alluvium.

11. Ph. fuscipennis Mannh.

(Mannh. Brach. 28; Ganglb. Käf. M. II, 447. - politus Fabr. Syst. Ent. 266; Erichs. Käf. Mk. Br. I, 452; Gen. Spec. Staph. 443; Kraatz Ins. D. II, 581; Thoms. Skand. Col. II, 162; Muls. et Rey Brévip. 1877, 250).

Fusiform, closely allied to decorus, but a little smaller, with somewhat glistening elytra, easily identified by the color of the antennal first joint.

Black, glistening; head and pronotum polished, these as well as the elytra darkly ore- or bronze-colored; elytra and abdomen finely black-haired; antennal first joint yellow on ventral side.

The head is oval, proportionately small, much narrower than pronotum, the antennae slender; pronotum anteriorly narrowing, with 4 punctures in each dorsal row and 4-5 side-punctures; elytra with dense, fine and somewhat scabrous punctation; abdomen with dense and fine punctation. L. 9-11 mm.

In the ♂ the fore-tarsi are rather strongly dilated, and the abdominal sixth ventral joint with angulate incision at tip.

Distributed in Europe and North Asia, and rather common in this country in open fields at manure, in woods under foliage, and at fungi, at water-edges under alluvium. The larva is found and reared by Cand. S. Jensen (9. 1895).

12. Ph. lucens Er.

(Erichs. Käf. Mk. Br. I, 452; Gen Spec. Staph. 443; Kraatz Ins. D. II, 582; Thoms. Skand. Ins. I, 32; Muls. et Rey Brévip. 1877, 252, - Mannerheimi Fauv. 1868; Ganglb. Käf. M. II, 447).

Very closely allied to fuscipennis, but with shorter, more robust, entirely black antennae, less slender tarsi, and somewhat more robustly punctated elytra etc.

Black; head and pronotum polished with darkly greenish bronze-lustre, elytra with feeble, darkish-bronze lustre, together with the abdomen finely black-haired, abdomen occasionally with feebly changeable color.

The head is short oval, much narrower than pronotum; the antennae distinctly more robust and shorter than in the preceding species, and the next-last joints noticeably transverse, pronotum broader, with
----(Page 398)-----
the same number of punctures as in fuscipennis; elytra with dense scabrous punctation of modified lustre; abdomen rather densely and finely punctate. L. 9-11 mm.

In the ♂ the fore-tarsi is only very feebly dilated; the abdominal sixth ventral joint with obtuse-angulate incision at tip.

Distributed in Europe, but very rare in our country; on damp ground under leaves and moss, also at water-edges in alluvium. (Amager, Donse, Aalborg at the Fjord, Randers, Taps Norreskov, Tørring at Haderslev).

13. Ph. varius Gyllh.

(Gyllh. Ins. Suec. II, 321; Erichs. Käf. Mk. Br. I, 455; Gen. Spec. Staph. 447; Kraatz Ins. D. II, 583; Thoms. Skand. Col. II, 163; Muls.

et Rey Brévip. 1877, 255; Janglb. Käf. M. II, 448).

Narrowly fusiform, considerably smaller than the nearest preceding species; recognized, inter alia, by very shiny head and pronotum without metallic reflection.

Black, glistening; head and pronotum specular; elytra most often unicolorous darkly bronze-green, rarely each with a large, red spot at tip (v. bimaculatus Gravh.) or more extensively red (v. nitidicollis Boisd.), elytra as well as the abdomen haired; legs pitch-black, occasionally yellowish-brown (v. picimanus Men.).

Head oval, considerably narrower than pronotum; the antennae rather robust and slightly thickened outwardly, their next-last joints fully as broad as long; pronotum anteriorly narrowing, with 4 punctures in each dorsal row, and with 5-6 side-punctures; elytra rather densely and finely, abdomen less densely, more finely punctate, its second and third free dorsal joint often with a small angulate tip at middle of the transversal impression of the base. L. 6-7.5 mm.

In the ♂ the fore-tarsi are strongly dilated, and the abdominal sixth ventral joint at tip with a rather deep angulate incision with a membrane at the bottom.

Distributed in Europe and North Asia, in Denmark it is frequent in most places; under leaves and moss, at rotten plants and manure, on heath-land hills often numerous under lichen and heather; v. bimaculatus is very rare here (Vejløbst [Boye] and singly at Copenhagen), in Middle Europe it, and also v. nitidicollis are less rare, also found in Skaane (Grill).

14. Ph. marginatus Müll.

(O.F. Müller Fauna Fridr. 23; Erichs. Käf. Mk. Br. I, 453; Gen. Spec. Staph. 444; Kraatz Ins. D. II, 587; Thoms. Skand. Col. II, 163; Muls. et Rey Brévip. 1877, 266; Ganglb. Käf. M. II, 448).

Feebly fusiform and elongate, easily identified, inter alia, by the yellowish-red sides of pronotum.

Black, glistening; head and pronotum polished; pronotal sides broadly yellowish-red; elytra grayish dully-black, with rather dense bronze-lustrous hair,----- (Page 399)----- the abdomen with more sparse brownish hair; antennal first joint on ventral side, base of maxillary palpi, and legs with coxae reddish-yellow.

The head is oval, much narrower than pronotum; antennae long and slender, their next-last joints longer than broad; pronotum anteriorly narrowing, fully as long as broad, with 4 punctures in each dorsal row, and with 4-5 side-punctures; elytra somewhat longer than pronotum, rather finely and densely punctate, abdomen more finely but less densely punctate, its second and third free dorsal joint with a small angulate tip at middle of the basal transversal impression; the fore-tarsi in both sexes dilated, and the claw-joint thickened. L. 8-10 mm.

In the ♂ the abdominal sixth ventral joint with an angulate incision at tip.

Distributed and especially in wooded regions not rare at manure, carrion, and rotten plants. North and Middle Europe.

15. Ph. lepidus Gravh.

(Gravh. Micr. 31; Erichs. Käf. Mk. Br. I, 457; Gen. Spec. Staph. 450; Kraatz Ins. D. II, 588; Thoms. Skand. Col. II, 163; Muls. et Rey Brévip. 1877, 269; Ganglb. Käf. M. II, 449).

A wingless, narrowly fusiform species, easily identified within the second series by the color of the short elytra and the legs.

Black, glistening; head and pronotum specular; elytra yellowish-red, very rarely dark with bronze-reflection, these and the abdomen finely haired; antennal base, and the legs reddish-yellow, maxillary palpi brownish.

Head oblong, much narrower than pronotum, antennae feebly thickened outwardly, their next-last joints scarcely transverse; pronotum anteriorly distinctly narrowing, with 4 punctures in each dorsal row, and with 4-5 side-punctures; elytra shorter than pronotum, with fine and dense punctation; the abdomen anteriorly with fine and dense, the last two-three dorsal joints with scattered punctation. L. 6-7 mm.

In the ♂ the fore-tarsi are rather strongly dilated, and the abdominal sixth ventral joint at tip with a rather deep angulate incision with membranous border.

On high sandy ground at root of plants and under moss, but also on sandy lake-shores, distributed in North and Middle Europe, in this country it is rare and local. (Skagen, Hvorup Hills north of Aalborg, Silkeborg; Fefsnæs and Nykøbing Lyng, Tisvilde, Bromme, Sorø, at Tiis Lake, and several other places). The variety with dark, bronze-glistening elytra (v. gilvipes Br.) is apparently heretofore not found here.

16. Ph. nitidulus Gravh.

(Gravh. Micr. 27; Erichs. Käf. Mk. Br. I, 457; Jen. Spec. Staph. 450; Kraatz Ins. D. II, 589; Thoms. Skand. Col. II, 167; Muls. et Pey Brévip. 1877, 389; Ganglb. Käf. M. II, 449).

A comparatively small, narrow species, wingless, identified especially by short, robustly punctate elytra.

Black, glistening; head and pronotum specular; elytra occasionally with feeble metallic lustre, these as well as the abdomen sparsely haired; antennae and mouth-parts darkly reddish-brown; the legs yellowish-red or brownish-yellow.

The head is oblong, with rather small eyes and longer temples; antennae proportionally robust, their next-last joints transverse; pronotum anteriorly narrowing, longer than broad, with 4 punctures in each dorsal row, and with 5 side-punctures, the punctures fine; elytra shorter than pronotum, with robust but not dense punctation; abdomen proportionately thick, often broader than the elytra, with fine, and especially to the back scattered punctation; fore-tarsi in both sexes simple. L. 4-5 mm.

In the ♂ the abdominal sixth ventral joint at tip broadly but not deeply emarginate.

Distributed, but local and rare; on sandy ground, in downs at the root of plants growing in the sand, in gravel and sand pits.

(Karlum Heda south of Tønder, Lebbstrup Hills at Panders, Lindum Forest, Nibe; at Tiis Lake and Vejlobugt). Occasionally it is also found with the black ant (Thoms.). North and Middle Europe.

17. Ph. albipes Gravh.

(Gravh. Micr. 28; Erichs. Käf. Mk. Br. I, 457; Jen. Spec. Staph. 449; Kraatz Ins. D. II, 585; Thoms. Skand. Col. II, 163; Muls. et Rey Brévip. 1877, 271; Ganglb. Käf. M. II, 449).

Narrowly fusiform, among closely allied species with proportionately short hind-tarsal joint, recognized also by the narrow, oblong head, and anteriorly distinctly narrowed pronotum.

Black, glistening; head and pronotum polished, the latter in certain directions with brownish changeable color; elytra occasionally pitch-brown, these as well as the abdomen with grayish-brown hair; antennal base and mouth brownish; legs reddish-yellow with brownish tibiae and tarsi, sometimes entirely pitch-brown (v. alpinus Bpph.).

The head is small, oblong oval, much narrower than pronotum; the punctures of the transversal punctate row of the forehead fine, and the two middle ones much farther removed from each other than from the outer punctures at inner margin of the eye; the antennae scarcely thickened outwardly, their next-last joints as long as broad; pronotum anteriorly distinctly narrowed, as long as broad, with 4 punctures in each dorsal row, and with 4-5 side-punctures; elytra as long as pronotum, with dense and rather fine punctation, abdomen with less dense, but finer punctation; first joint of hind-tarsi thickened somewhat, shorter than the following three joints together, only a little longer than the claw-joint. L. 5-6 mm.

In the ♂ the fore-tarsi are feebly dilated, and the abdominal sixth ventral joint with broadly angulate incision.

Distributed in Europe and North Asia; in this country as a whole rather rare, mostly in alluvium at lake shores and on the beach, however also in plant-fertilizer. The larva is found and reared by Jand W. Schlick. (19. 9. 97).

18. Ph. fimetarius Gravh.

(Gravh. Micr. 175; Erichs. Käf. Mk. Br. I, 460; Gen. Spec. Staph. 456; Kraatz Ins. D. II, 592; Thoms Skand. Col. II, 159; Muls. et Fey Brévip. 1877, 286; Ganglb. Käf. M. II, 450).

Of rather even breadth; among closely allied species with short first hind-tarsal joint recognized, inter alia, by the position of the punctures in the transversal punctate row of the forehead.

Black, glistening; head and pronotum polished; elytra with greenish bronze-lustre; legs brownish-yellow. The elytral suture, and the posterior margins of the abdominal joints occasionally reddish-brown.

The head is oblong square, in the ♂ fully as broad as pronotum, in the ♀ a little narrower than this, in both with a flat impression at middle between the eyes, and with a transversal punctate row, in which the two middle punctures are placed much farther from each other than from the outer punctures at inner margin of the eye, and are placed obliquely in front of these; antennae rather slender, their next-last joints hardly transverse. Pronotum of even breadth, longer than broad, somewhat narrower than the elytra, with 4 punctures in each dorsal row, and with 5 side-punctures, the punctures large and deep; elytra a little longer than pronotum, with rather coarse, but not dense punctation; abdomen with fine and scattered punctation; the hind-tarsal first joint shorter than the following three joints together, scarcely as long as the claw-joint; fore-tarsi in both sexes simple. L. 6-7 mm.

In the ♂ the abdominal sixth ventral joint is at tip feebly emarginate.

Common everywhere in Europe, also in our country, at manure, decaying fungi and other plants. Specimens with 5 punctures in the pronotal dorsal rows occur.

19. Ph. umbratilis Gravh.

(Grach. Micr. 170; Erichs. Käf. Mk. Br. I, 454; Gen. Spec. Staph. 445; Kraatz Ins. D. II, 583; Thoms. Skand. Col. II, 158; Muls. et Pey Brévip. 1877, 276; Ganglb. Käf. M. II, 450. - subfuscus Gyllh. Ins. Suec. II, 326).

Of rather even breadth, most often larger than fimetarius, and more robust; among closely allied species recognized by proportionately large eyes, somewhat longer than the temples.

Black, glistening; head and pronotum polished; elytra black with feeble bronze-lustre, sometimes brownish-black, these and the abdomen with ~~with~~ rather fine and long hair; maxillary palpi, and often also the antennal base pitch-brown, legs yellowish-brown.

The head rounded-off square, in the ♂ as broad as, in the ♀ a little narrower than pronotum, with oval, not protruding eyes, which are somewhat longer than the temples; the punctures in the transversal row of forehead large, broadly separated in pairs; antennae slender, their next-last joints as long as broad; pronotum as long as broad, not narrowing anteriorly, somewhat narrower than elytra, with 4 punctures in each dorsal row and with 5 side-punctures, the punctures large and robust; elytra fully as long as pronotum, with rather fine and dense punctation, more distinct and dense than in the abdomen;

the hind-tarsal first joint scarcely as long as the three following;

joints together, as long as the claw-joint. L. 7-8 mm.

In the ♂ the fore-tarsi are strongly dilated, and its sixth ventral joint has at tip a deep angulate incision with a membranous border at the bottom.

Distributed in Europe; it is here not common everywhere, mainly distributed on damp ground under leaves, moss and in alluvium, at times it is also found at outflowing tree-sap.

20. Ph. cephalotes Gravh.

(Gravh. Micr. 22; Erichs. Käf. Mk. Br. I, 459; Jen Spec. Staph. 455; Kraatz Ins. D. II, 592; Thoms. Skand Col. II, 158; Muls et Rey. Brévip. 1877, 283; Ganglb. Käf. M. II, 450).

Rather of even breadth, in regard to the closely allied species inter alia, recognized by the position of the punctures in the transversal row of the head, with rather coarsely punctated elytra, and by the often peculiarly broad head of the (♂ = meracephalus Heer).

Black, glistening; head and pronotum polished; elytra bronze-glistening, these and the abdomen with rather long and fine grayish-brown hair; maxillary palpi, and the legs pitch-brown or reddish-brown; the antennae and posterior margins of the abdominal joints often brownish.

The head in the ♀ and in small ♂♂ rounded-off square and about as broad as pronotum, in robust ♂♂ broadly square, and distinctly broader than pronotum, as a rule with an impression on forehead at middle between the eyes; the eyes are shorter than the temples; the middle punctures in the transversal punctate row are placed only a little farther from each other than from the outer punctures; antennae rather

slender, their next-last joints feebly transverse; pronotum amply as long as broad, not narrowing anteriorly, somewhat narrower than elytra, with 4 punctures in each dorsal row, and with 8 side-punctures, all punctures rather robust; elytra a little longer than pronotum, with rather coarse and dense punctation; the abdomen with fine and rather dense punctation; first joint of hind-tarsi shorter than the three middle joints together, about as long as the claw-joint.

l. 7-9 mm.

Fore-tarsi in both sexes simple; the abdominal sixth ventral joint in the ♂ with a rather deep angulate incision.

Distributed in Europe, also in North America, not rare in this country, at manure, decaying fungi and other plants, often in dunghills for plants, - compost.

21. Ph. sordidus Gravh.

(Gravh. Micr. 176; Erichs. Käf. Mk. Br. I, 459; Gen. Spec. Staph. 456; Kraatz Ins. D. II, 591; Thoms. Skand. Col. II, 159; Muls. et Rey Brévip. 1877, 290; Ganglb. Käf. M. II, 451).

Smaller than cephalotes, and with the punctation of elytra more scattered and coarse; from the closely allied fimetarius it is separated namely by the more square head, by the position of the punctures in the transversal row of the forehead, also by the much coarser punctation of the elytra.--(Page 403)-----

Black, head and pronotum polished; elytra with bronze-lustre, occasionally brownish, these and abdomen haired; legs and maxillary palpi brown, sometimes the legs are blackish-brown or yellowish-brown.

The head is rounded off square, in the ♂ as broad as pronotum, in the ♀ a little narrower than this; the punctures in the transversal punctate row of the forehead are placed with an equal space between each other; the eyes are shorter than the temples; the antennae rather short, their next-last five joints are feebly transverse; pronotum a little narrower than elytra, as long as broad, with 4 punctures in each dorsal row, and with 5 side-punctures, all punctures robust and deep; elytra scarcely longer than pronotum, with coarse and scattered punctation; the abdomen with fine and not dense punctation; first joint of hind tarsi shorter than the three middle joints together, as long as the claw-joint. L. 5-6 mm.

The fore-tarsi in the ♂, as well as in the ♀, simple; the abdominal sixth ventral joint in the ♂ emarginate.

Distributed everywhere in Europe, North Asia, and North America; in this country frequent at manure, decaying fungi and other plants, in plant dunghills and under leaves.

22. Ph. fuscus Gravh.

(Gravh. Micr. 29; Erichs. Käf. Mk. Br. I, 461; Jen. Spec. Staph. 457; Kraatz Ins. D. II, 593; Thoms. Skand. Col. II, 159; Muls. et Rey Brévip. 1877, 296; Ganglb. Käf. M. II, 451).

Among closely allied species easily recognized by the color.

Pitch-black or pitch-brown, glistening; head and pronotum polished; elytra and abdomen rather finely haired; the head most often entirely black; pronotum pitch-brown and posteriorly more or less widely brownish yellowish-red, in light colored specimens entirely yellowish-red

with a pitch-brown spot on the middle anteriorly; the elytra brownish red; abdominal tip, mouth, antennae and legs yellowish-red.

The head is rounded-square, in the ♀ a little narrower, in robust ♂♂ a little broader than pronotum; the eyes shorter than the temples; the punctures in the transversal punctate row of fore-head of equal distance from each other; antennae rather short and robust, their middle and next-last joint distinctly transverse; pronotum as long as broad, a little narrower than the elytra, and only feebly narrowing anteriorly, with four punctures in each dorsal row and with 5 side-punctures, all punctures rather fine; elytra fully as long as pronotum, with rather fine and dense punctation; the abdomen with fine and rather dense punctation; first joint of hind-tarsi shorter than the following three joints together, as long as the distal joint. L. 5-7 mm.

The fore-tarsi in the ♂ are not dilated; abdominal sixth ventral joint at tip slightly emarginate.

Distributed in various parts of the country, but rare and local. It lives mainly in hollow trees in the crumbings, in waste from birds' nests and mouse-nests, ----(Page 404)----- in tunnels and gnawings of the larva of Cossus, it is more rarely encountered in wasps' nests (Hjørring, Aalborg, Kolding; Bognaes, Øbjerggaard, vicinity of Copenhagen, Hillerød and several other places). Its main home is Middle Europe, but it is also found in Skaane, and Middle Sweden, not found in Norway.

3rd Series. Pronotum with 5 Punctures in each Dorsal Row.

23. Ph. eberinus Gravh.

(Gravh. Micr. 170; Erichs. Gen. Spec. Staph. 461, ex parte; Kneitz Ins. D. II, 596, ex parte; Thoms. Skand. Col. II, 159; Muls. et Rey Drévip. 1877, 301; Ganglb. Käf. M. II, 451. - varians Erichs. Käf. M. Br. I, 461).

Of rather even breadth (σ^1) or feebly fusiform (ϕ), among the following most closely allied species particularly recognizable by the color of elytra, the angulate tip of the first free abdominal joints, and the elongate first joint of the hind tarsi.

Black, glistening; head and pronotum polished; the elytra black with bronze reflection, these together with the abdomen finely haired; the legs are occasionally reddish-brown.

The head is rounded-off-square, in the σ^1 as broad as pronotum, in the ϕ narrower than same; the eyes shorter than the temples; antennae scarcely thickened outwardly (distally), their middle and next-last joints most often feebly transverse; pronotum as long as broad, a little narrower than the elytra, forwardly not, or only in the ϕ feebly narrowing, with 5 rather robust punctures in each dorsal row, and with 5 side-punctures, of which the two hindmost are placed almost parallel with the dorsal row (especially in the ϕ); elytra as long as pronotum, with rather robust and dense punctation; abdomen with rather fine and dense punctation, its second and third free dorsal joints at middle of the impression on base with a small angulate tip, which often is feeble, but still noticeable; the fore-tibiae strongly spiniferous; first joint of hind-tarsi distinctly longer than the claw-joint. L. 7-8.5 mm.

In the ♂ the fore-tarsi are strongly dilated, in the ♀ feebly; the abdominal sixth ventral joint in the ♂ at tip with a rather deep, angulate incision with a membranous border at bottom.

Distributed in Europe and North Asia, and everywhere in this country rather common at manure, carrion and under decaying plants. It is not rare in this species to find specimens with only 4 punctures in one of the punctate rows of pronotum.

24. Ph. coruscus Gravh.

(Gravh. Micr. 33; Erichs. Käf. Mk. Br. I. 463; Gen. Spec. Staph. 465; Muls. et Rey Brévip. 1877, 303; Ganglb. Käf. M. II, 452. - ebenus var. coruscus Kraatz Ins. D. II, 597).

From ebenus, which it in all mainly resembles, and to which it therefore often is ascribed as a variety, it differs only in that the elytra are red. L. 7-8 mm.

Distributed in Europe, but in this country rather rare, apparently more frequent in southern Sjaelland and the small islands than in Jutland; at Vejlsøbugt it was on one occasion taken in numbers, but it usually occurs only singly. (Aalborg; Tommerup; Hillerød and several other places). At carrion and rotten plants. In Sweden, Norway and Finland it is, to my knowledge, not found.

25. Ph. concinnus Gravh.

(Gravh. Micr. 21; Muls. et Rey Brévip. 1877, 305; Ganglb. Käf. M. II, 452. - varians Thoms. Skand. Col. II, 159. - ebenus v. minor Erichs. Gen. Spec. Staph.; Kraatz Ins. D. II, 597).

It is ordinarily somewhat smaller than ebenus and presumably

a variety of this species, from which it as a whole only differs in, that the next-last three joints of the antennae are distinctly transverse, and that the transversal ridge on base of the abdominal second and third free dorsal joints is linear without angulate tip at middle. L. 5-7 mm.

Distributed like ebeninus and it is common here at manure, carrion and under rotten plants. One form with brownish-yellow legs, ab. ochreopus Gravh., is rare.

26. Ph. corvinus Er.

(Erichs. Käf. Lk. Er. I, 462; Jen. Spec. Staph. 402; Kraatz Ins. D. II, 599; Thoms. Skand. Col. II, 160; Banglb. Käf. L. II, 452).

In appearance especially like concinus, from which it mainly differs in, that the first joint of hind tarsi is distinctly shorter, only of equal length with the claw-joint.

Entirely black or the fore-tarsi alone brownish; head and pronotum polished; elytra without metal reflection, elytra and abdomen glistening and black-haired.

The head is rounded-square, in the ♀ about as broad as pronotum, in robust ♂♂ a little broader than this; the middle punctures in the transversal punctate row of the forehead are closer together than in concinus, and are rather robust; antennae rather slender, their next-last joints as long as broad; pronotum anteriorly scarcely narrowed, somewhat narrower than elytra, as long as broad, with 5 punctures in each dorsal row, and with 5 side-punctures, of which the two hindmost are placed more obliquely toward the dorsal row than in ebeninus and

concinus. The elytra are rather finely and densely punctate; the abdomen with fine and rather dense punctation, more dense than in concinus, transversal ridge on base of the second and third free dorsal joint linear without angulate tip on middle; fore-tibiae sparsely and finely spiniferous, hind-tarsi shorter than in the closest preceding species, their first joint shorter than the three following joints together, as long as the claw-joint. L. 7-8 mm.

In the ♂ the fore-tarsi are strongly dilated, and the abdominal sixth ventral joint at tip with a triangular incision, the fifth obtusely emarginate.

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Distributed in North and Middle Europe, but everywhere, also in this country very rare. It lives on very damp moorland ground, in water-moss, in old peat holes, in the moss at springs at the outflow and like places. ("Favn-Kilde" at Faebild Bakker west of Skørping; Sorø, Hillerød; Rønne).

27. Ph. immundus Gyllh.

(Gyllh. Ins. Suec. II, 337; Erichs. Gen. Spec. Staph. 479; Ganglb. Käf. M. II, 453. - fumigatus Erichs. Käf. Mk. Br. I, 463; Kraatz Ins. D. II, 599; Thoms. Skand. Col. II, 161; Muls. et Rey Brévip. 1877, 313).

Very closely allied to ebeninus and concinus, but the fore-tibiae not spiniferous, abdomen more finely punctate and the legs ordinarily of lighter color.

Black, head and pronotum polished; elytra and abdomen glistening and finely haired, elytra with feeble ore- or bronze-reflection; legs brown, fore-tibiae and tarsi most often yellowish brown.

The head is rounded-square, in the ♀ narrower than pronotum, in the ♂ about as broad as pronotum; eyes shorter than temples; antennae rather slender, their next-last joints scarcely transverse; pronotum somewhat narrower than elytra, anteriorly scarcely narrowing, as long as broad, with 5 punctures in each dorsal row, and with 5 side-punctures, of which the two hindmost in line are oblique to the dorsal row; elytra as long as pronotum, with rather fine and dense punctation; more dense than in ebenius and concinus; fore-tibiae not spiniferous; fore-tarsi in both sexes strongly dilated, first joint of hind-tarsi elongated and much longer than the claw-joint. L. 7-8 mm.

In the ♂ the abdominal sixth ventral joint with a deep, acute incision at tip; fore-tarsi are somewhat more strongly dilated than in ♀.

Distributed in Europe; in this country rather rare and local, on damp ground, especially at the beach in alluvium. (Aalbaek; at Vejlø-bugt and several places in south Sjaelland; Nykøbing F., Gedser, Knuthenborg).

28. Ph. debilis Gravh.

(Gravh. Micr. 35; Erichs. Käf. Mk. Br. I, 467; Gen. Spec. Staph. 472; Kraatz Ins. D. II, 604; Thoms. Skand. Col. I, 149; Muls. et Rey Brévip. 1877, 317; Ganglb. Käf. M. II, 453).

A smaller species of rather even breadth, most often with brownish elytra and light colored legs, furthermore recognizable by rather small eyes and sparsely spiniferous fore-tibiae.

Black, head and pronotum polished, the latter occasionally brown-



ish; elytra and abdomen glistening and finely haired, elytra without metallic reflection, these and the posterior margins of the abdominal joints most often brownish; antennal first joints and the legs yellowish-brown.

The head is rounded-square, a little narrower than pronotum, with rather small eyes and longer temples; the antennal next-last joints somewhat broader than long; pronotum a little narrower than elytra,

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anteriorly feebly narrowed, with 5 rather fine punctures in each dorsal row, and with 5 side-punctures, of which two are in line obliquely to the dorsal row; elytra fully as long as pronotum, with rather fine and dense punctation; abdomen with finer and denser punctation; fore-tibiae with only a few spines; fore-tarsi in both sexes dilated, but most strongly in the ♂; hind tarsal first joint longer than the claw-joint. L. 4-5.5 mm.

In the ♂ the abdominal sixth ventral joint at tip with a deep and acutely angulate incision.

Distributed in the entire country, and in most places not rare, especially in compost in larger gardens, also at fungi, and under decaying plants. Europe, North Asia and North America.

29. Ph. sanguinolentus Gravh.

(Gravh. Micr. 36; Erichs. Käf. Mk. Br. I, 464; Gen. Spec. Staph. 467; Kraatz Ins. D. II, 600; Thoms. Skand. Col. II, 161; Muls. et Rey Brévip. 1877, 320; Langlb. Käf. M. II, 452).

Among the closest following, nearest allied species recognized especially by the much larger and broader head, and by the extremely

fine and dense punctation of the abdomen; the body anteriorly less narrowed.

Black, head and pronotum polished; elytra glistening, with rather dense, grayish-brown hair, a mutual spot at the suture and an oblong, more or less extensive spot under the humeri red; abdomen with extremely fine and dense grayish-brown hair, this producing a silky dull shine; fore-coxae reddish-yellow; legs blackish-brown, though often with lighter tibiae and tarsi. Occasionally the red spots on elytra are confluent (var. contaminatus Gravh.), more rarely the elytra are entirely black (var. unicolor Seidl.).

The head is rounded-square, hardly as broad as pronotum, with proportionately large eyes and short temples; the antennae slender, their next-last joints longer than broad; pronotum a little narrower than elytra, as long as broad, anteriorly scarcely narrowing, with 5 punctures in each dorsal row, and with 5 side-punctures, of which two are placed in line almost parallel with the dorsal row; elytra fully as long as pronotum, rather finely and densely punctate; abdomen with extremely fine and dense punctation; fore-tibiae sparsely spiniferous; fore-tarsi in both sexes dilated, but most strongly in the ♂; first joint of the hind-tarsi longer than the claw-joint. L. 7-8 mm.

In the ♂ the abdominal sixth ventral joint at tip with a deep, acute incision with a membranous border at the bottom.

Distributed in Europe and not rare in this country at manure, carrion and rotting plants, often also in alluvium and on beeches

under seaweed. The larva is found at Damhusmosen, Copenhagen, in decaying plant fragments, and reared (W. Schlick, 8. 1897).

30. Ph. longicornis Steph.

(Steph. Ill. Brit. V, 237; Ganglb. Käf. M. II, 454. - scybalarius Nordm., Kraatz Ins. D. II, 601; Thoms. Skand. Col. II, 164; Muls. et Rey Brévip. 1877, 328. - varians var. b. Erichs. Gen. Spec. Staph. 470).

Very closely allied to varians Payk. and in appearance very much like this species' variety unicolor with entirely black elytra, but most often however somewhat larger and more flat, with larger head, more robustly punctate elytra and more finely punctate abdomen, furthermore recognized by the color of first antennal joint.

Black, head and pronotum polished; elytra and abdomen with fine, grayish-brown hair, glistening, abdomen most often with metallic bluish reflection; antennal first joints on ventral side, fore-coxae and often also all femora or at least the four anterior ones brownish-yellow.

Head oblong, narrower than pronotum, with rather large eyes and short temples; antennae slender, their five next-last joints longer than broad; pronotum narrower than elytra, as long as broad, anteriorly distinctly narrowing, with five punctures in each dorsal row, and with 5 side-punctures, of which two in line are parallel with the dorsal row; elytra fully as long as the pronotum, with rather fine and dense, feebly scabrous punctation; fore-tarsi in both sexes dilated, strongly in the ♂, more feebly in the ♀; first joint of hind tarsi

considerably longer than ~~than~~ the claw-joint. L. 7-8 mm.

In the ♂ the abdominal sixth ventral joint with an obtuse angulate incision at tip.

Distributed in all continents; in our country mostly on high ground, and frequently at manure, decaying plants and carrion.

31. Ph. cruentatus Gmel.

(Gmelin, Linn. Syst. Ed. 13, 2035; Muls. et Pey brévip. 1877, 325; Ganglb. Käf. M. II, 454. - bipustulatus Panz. Faun. Ins. Germ. 27; Erichs. Käf. Mk. Br. I, 465; Gen. Spec. Staph. 468; Kraatz Ins. D. II, 601; Thoms. Skand. Col. II, 164).

Most often somewhat larger and broader than the closely allied varians and with somewhat larger head, furthermore deviating from this and from longicornis by the color of elytra, and most often darker fore-coxae.

Black, glistening; head and pronotum polished; elytra with a large, blood-red spot in toward the corner of suture, elytra and abdomen black-haired; fore-coxae and legs most often black, or the former on inner side yellowish-brown.

Head short and oval, with somewhat larger eyes than in varians, and with shorter, less flat temples; antennal next-last joints about as broad as long; pronotum as long as broad, anteriorly narrowed with 5 punctures in each dorsal row, and with 5 side-punctures, of which two in line are parallel with the dorsal row; elytra with dense and rather fine, abdomen with less dense and finer punctation; fore-tarsi, hind-tarsi, and sex-characters of ♂ same as in varians. L. 6-7 mm.

Distributed in Europe and North Asia; everywhere here rather com-

mon at manure, rotting plants and carrion, on heathland hills under lichen and moss, on beaches under seaweed.

32. Ph. varians Payk.

(Payk. Mon. Staph. 45; Erichs. Den. Spec. Staph. 470; Kraatz Ins. D. II, 602; Muls. et Rey Brévip. 1877, 331; Langlb. Käf. II, 484. - opacus Gyllh. Ins. Suec. II, 340; Erichs. Käf. Mk. Br. I, 465; Thoms. Skand. Col. II, 164).

A rather narrow, fusiform species with remarkable small head, rather small eyes, light colored fore-coxae, and elytra with somewhat dully shining, changeable color.

Black, head and pronotum polished; elytra with dense blackish-brown hair, thereby with somewhat dull shine, most often with a more or less distinct, from humerus downward and obliquely inwardly directed brownish-red longitudinal spot, which however not infrequently disappears entirely, in such case the elytra are unicolorous black (var. unicolor Steph.); abdomen glistening, finely haired; fore-coxae, especially on inner side, yellowish-brown; legs pitch-brown.

The head is remarkably small, much narrower than pronotum, narrowly oval, with rather small eyes, and a little longer temples; antennae slender, their middle- and next-last joints longer than broad; pronotum anteriorly rather strongly narrowing, as long as broad, with 5 punctures in each dorsal row, and with 5 side-punctures, of which two in line are parallel with the dorsal row; elytra densely and rather finely punctate, abdomen rather finely, and to the fore densely, toward the tip less densely punctate; fore-tarsi in the ♀ feebly, in

the ♂ strongly dilated, first joint of hind tarsi longer than the claw-joint. L. 5-7 mm.

In the ♂ the abdominal sixth ventral joint at tip acutely and deeply emarginate.

Distributed in Europe and Asia, and everywhere, also in this country common under plant-matter, at manure and carrion, on heath-land hills under heather and lichen, on beaches and at lake shores under alluvium. The larva is found in cow-manure and reared ("". Schlick. 15. 9. 1894).

33. Ph. agilis Gravh.

(Gravh. Mon. 77; Kraatz Ins. D. II, 603; Thoms. Skand. Col. II, 165; Muls. et Rey Brévip. 1877, 334; Ganglb. Käf. M. II, 454. - opacus var. d. Erichs. Käf. Mk. Br. I, 466).

Especially closely allied to, and perhaps only a form of varians, with which it corresponds in form of body, smallness of head, color of the fore-coxae, and sex-characters of the ♂ etc. It deviates in the following characteristics:

Elytra are black or blackish-brown, often with feeble bronze-reflexion, their posterior margin narrowly or occasionally more widely reddish-brown; antennae shorter and more robust, their middle and next-last joints feebly transverse, eyes as long as the temples; elytra less densely punctate. It is ordinarily somewhat smaller than varians, and also narrower. L. 5-6 mm.

Distributed in Europe and Asia. It is seemingly rare in this country or even very rare, and is found mainly on marshy and damp forest ground under moss and leaves, also in alluvium. (Aalborg, Silkeborg; Boserup, Damhusmosen and several other places).

34. Ph. discoideus Gravh.

(Gravh. Micr. 38; Erichs. Käf. Mk. Br. I, 469; Gen. Spec. Staph. 474; Kraatz Ins. D. II, 605; Thoms. Skand. Col. II, 160; Muls. et Rey Brévip. 1877, 341; Ganglb. Käf. N. II, 455).

Easily identified by the rather short first joint of hind tarsi, the color of elytra, and form of the head.

Black, pitch-black or pitch-brown, glistening; head and pronotum polished; elytra and abdomen with grayish-brown hair, elytral suture and sides, also posterior margins of the abdominal ventral joints reddish or brownish yellow; antennae, mouth-parts and legs reddish-yellow.

Of rather even breadth; the head in ♂ almost square with nearly rectangular temple-corners, as broad as pronotum, in the ♀ a little narrower. The eyes as long as temples; antennae rather short, their middle and next-last joints transverse; pronotum as long as broad, nearly as broad as elytra, anteriorly hardly narrowing, with 5 punctures in each dorsal row, and with 5 side-punctures, of which two in line are oblique to the dorsal row; elytra with rather robust and dense, the abdomen with fine and less dense punctation; first joint of hind tarsi a little longer than the claw-joint, but a little shorter than the three middle joints together. L. 5 mm.

In the ♂ the fore-tarsi are dilated and the abdominal sixth ventral joint at tip slightly emarginate.

Distributed in all continents; here it is rare or local; mainly found at manure-benches, in compost, in waste at hothouses, and bakeries and like places; rarely in alluvium (v. Madum Sø 8. 1891, Auth.)

35. Ph. ventralis Gravh.

(Gravh. Micr. 174; Erichs. Käf. Mk. Br. I, 468; Gen. Spec. Staph. 473; Kraatz Ins. D. II, 605; Thoms. Skand. Col. II, 160; Muls. et Pey Brévip. 1877, 337; Ganglb. Käf. M. II, 455).

Of rather even breadth, of appearance much like *debilis*, but ordinarily a little larger and more robust, with broader head, more robust punctures in the pronotal punctate rows, less finely punctated elytra, and with shorter first joints of hind tarsi.

Black or pitch-black, glistening; head and pronotum polished; elytra and abdomen with sparse grayish-brown hair; pronotum, elytra and posterior margins of the abdominal joints most often brownish; antennal first joints, mouth-parts, and the legs, also fore- and middle-coxae reddish or brownish yellow.

The head is rounded-square; eyes as long as temples, larger than in *debilis*; antennae rather robust, their middle and next-last joints transverse; pronotum as long as broad, only feebly narrowing posteriorly, and only a little narrower than elytra, with 5 robust punctures in each dorsal row, and with 5 side-punctures, of which two in line are parallel with the dorsal row; elytra a little longer than pronotum, with rather coarse, -----(Page 411) ----- but not dense punctation; abdomen with fine, anteriorly rather dense, posteriorly more scattered punctation; fore-tibiae more distinctly spiniferous than in *debilis*, fore-tarsi in the ♀ simple; first joint of hind tarsi as long as the vlaw-joint. L. 6 mm.

In the ♂ the head is larger and more transverse than in the ♀, as broad as pronotum, fore-tarsi feebly dilated, and the abdominal

sixth ventral joint at tip feebly emarginate.

In compost and on damp ground under leaves and in alluvium; distributed in our entire country, but rather rare or somewhat local.

Europe, Asia and America.

36. Ph. quisquiliarius Gyllh.

(Gyllh. Ins. Suec. II, 335; Erichs. Käf. Mk. Br. I, 469; Gen. Spec. Staph. 475; Kraatz Ins. D. II, 607; Thoms. Skand. Col. II, 160; Muls. et Rey Brévip. 1877, 348; Ganglb. Käf. M. II, 455).

Rather slender and of even breadth; among the closely allied species recognized mainly by the color of elytra, though this varies.

Black, glistening; head and pronotum specular, pronotum most often brownish iridescent; elytra either black with greenish metallic reflection, or their posterior halves red, or they are predominately red, and only narrowly black at base; elytra and abdomen finely haired; antennal first joint, and the legs brownish or reddish yellow.

The head is rounded, narrower than pronotum; eyes about as long as temples; antennae rather slender, their next-last joints hardly transverse; pronotum narrower than elytra, anteriorly scarcely narrowed, with 5 rather robust punctures in each dorsal row, and with 5-6 side-punctures, of which two in line are oblique to the dorsal row; elytra longer than pronotum, with rather fine and dense punctation, abdomen with much finer and somewhat denser punctation; foretibiae spiniferous, first joint of hind tarsi as long as the claw-joint. L. 6-7 mm.

In the ♂ the fore-tarsi are strongly dilated, abdominal sixth

ventral joint with rather deep angulate incision.

Distributed in most continents, but here in Denmark rare or local; in ditches and clay-pits on damp ground under plants, at lake shores in alluvium, under stones and like places. The variety with red or half red elytra (inquinatus Steph., rubidus Er.) is in this country seemingly not rarer than the typical form with blackish-green elytra. Both forms are ordinarily found together.

4th Series: Pronotum with 6 Punctures in each Dorsal Row.

37. Ph. fumarius Gravh.

(Gravh. Mon. 67; Erichs. Käf. Mk. Br. I, 472; Gen. Spec. Staph. 482; Kraatz Ins. D. II, 610; Thoms. Skand. Col. IX, 154; Luls. et Pey Brévip. 1877, 354; Ganglb. Käf. M. II, 456).

A rather large, slender fusiform species, among the closest allied within 4th series, recognized mainly by the color of elytra and the legs.

(Page 412)

Black, glistening; head and pronotum polished, pronotum in certain directions with a fine, silky iridescent reflection; elytra darkly greenish with bronze-lustre, these and abdomen with fine gray hair, the legs reddish-yellow with black coxae.

Head oval, considerably narrower than pronotum; eyes nearly as long as temples; antennae slender, all joints longer than broad; pronotum posteriorly only a little narrower than elytra, scarcely as long as broad, narrowing anteriorly, with 6 punctures in each dorsal row, and with 5 side-punctures, of which two in line are almost parallel with the dorsal row; elytra a little longer than pronotum, with rather fine and dense punctation, abdomen anteriorly with fine and

rather dense, toward the tip with more scattered punctation; first joint of hind tarsi longer than the claw-joint. L. 7-9 mm.

In the ♂ the fore-tarsi are strongly dilated, and the abdominal sixth ventral joint at tip with a rather deep, angulate incision.

Distributed in Europe, but somewhat local, as a whole rather rare in Denmark, more frequent in the islands than in the peninsula; in alluvium at lake shores, under leaves on damp forest ground, and more rarely at rotten fungi. The larva is found in numbers, among other places, at Damhussoén at Copenhagen, in alluvium, and reared. (W. Schlick. 21. 7. 1895).

38. Ph. nigrita Gravh.

(Gravh. Mon. 68; Erichs. Käf. Mk. Br. I, 471; Gen. Spec. Staph. 481; Kraatz Ins. D. II, 611; Thoms. Skand. Col. II, 165; Muls. et Rey Brévip. 1877, 352; Ganglb. Käf. M. 456).

A little smaller than fumarius, to which it is very closely allied, but from which it however is easily separated by the following characters:

Elytra and the legs are entirely black, - for the tarsi alone brownish; pronotum a little longer than broad, narrower than in fumarius, its punctation rather fine; elytra and abdomen black-haired, with a little finer and denser punctation than in the preceding species. L. 7-8 mm.

Rare and local, more frequent in the islands than in Jutland; on damp marsh- or meadow-ground in moss, in alluvium at water edges and at root of plants, on damp forest ground under leaves (Aalborg,

Randers, Aarhus; Odense; Sorø, Copenhagen, Hillerød and several other places). Distributed in the greater part of Europe.

39. Ph. micans Gravh.

(Gravh. Micr. 25; Erichs. Käf. Mk. Br. I, 473; Gen. Spec. Staph. 484; Kraatz Ins. D. II, 612; Thoms. Skand. Col. II, 165; Muls. et Rey Brévip. 1877, 359; Ganglb. Käf. M. II, 457).

Narrowly fusiform, recognizeable, inter alia, by dull, proportionately long elytra, and by color of the legs.

Black, head and pronotum polished with silky iridescent reflection; elytra and abdomen with fine and rather dense gray hair, dull or dully shining; ----- (Page 413) ----- the antennal first joint and mouth-parts most often brownish; legs except the coxae reddish-yellow, sometimes brownish-yellow.

Head oval, considerably narrower than pronotum; eyes a little shorter than temples; antennae slender, their next-last joints as long as broad or a little longer; pronotum posteriorly hardly as broad as elytra, as long as broad, anteriorly narrowing, with 6 punctures in each dorsal row; elytra a little longer than pronotum, densely and very finely punctate, the ground surface furthermore very finely shagreened, due to this and the gray vestiture, elytra dull; the entire abdomen with especially fine, anteriorly also especially dense, punctation, the hindmost joints less densely punctate; first joint of hind tarsi longer than the claw-joint. L. 6-7 mm.

In the ♂ the fore-tarsi are rather strongly dilated, and the abdominal sixth ventral joint at tip with obtuse angular emargination.

Distributed everywhere in Europe, Asia, and North America on damp ground, and rather common in this country, at times numerous in alluvium.

40. Ph. virgo Gravh.

(Gravh. Micr. 169; Erichs. Gen. Spec. Staph. 483; Kraatz Ins. D. II, 611; Thoms. Skand. Col. II, 166; Muls. et Rey Brévip. 1877, 357; Langlb. Käf. M. II, 456).

Most often a little larger than micans, and differs from this only in the following characteristics:

The color is of a deeper black; elytra and abdomen, though most often somewhat dull, yet more glistening; antennae entirely black, legs black or pitch-brown with reddish-brown knees and tarsi, occasionally entirely reddish-brown with dark coxae; the two hindmost side-punctures of pronotum are in line parallel with the dorsal row; the abdomen is posteriorly less densely punctate than in micans.

L. 6-7 mm.

Distributed in Europe. It lives preferably on salty ground, on ocean beaches under seaweed and stones, but is however also found inland on damp ground in alluvium. In this country it is rare or very rare (Brønderslev, Vejle, Haderslev; Tjerup in Fyen; Sorø, Hillerød and several other places). It is common on the west coast of Sweden (Thoms.).

41. Ph. fulvipes Fabr.

(Fabr. Ent. Syst. I, 2, 526; Erichs. Käf. Lk. Er. I, 473; Gen. Spec. Staph. 485; Kraatz Ins. D. II, 614; Thoms. Skand. Col. II, 166; Muls. et Rey Brévip. ;877, 362; Langlb. Käf. M. II, 457).

Slender and narrowly fusiform, with red elytra, and thereby, in

comparison with the closest preceding species, very easily recognized.

Black, glistening; head and pronotum polished; elytra vividly yellowish-red, these and abdomen finely haired; antennae pitchy-brown, their first three joints, mouth-parts, and legs reddish-yellow.

Head oval, a little narrower than pronotum; eyes scarcely as long as temples; antennal next-last joints as long as broad; pronotum a little narrower than elytra, as long as broad, feebly narrowed to the fore, with 6 fine punctures in each dorsal row, and with 5 side-punctures, of which two in line are almost parallel with the dorsal row. The elytra are a little longer than pronotum, with rather fine and dense punctation; abdomen anteriorly and the anterior part of joints densely and rather finely punctate, toward the tip and at posterior margins of joints with finer and less dense punctation; first joint of hind tarsi longer than the claw-joint. L. 6-7 mm.

In the ♂ the fore-tarsi are strongly dilated, and abdominal sixth ventral joint obtuse angularly emarginated.

Distributed in Europe, Asia, and North America, but here it is local. It lives on sandy shores of lakes and rivers, under stones and in alluvium, often in great numbers. The larva is found at Tiis Lake, and reared. (W. Schlick. 1. 7. 1895).

42. Ph. salinus Kiesw.

(Kiesw. Stett. Ent. Ztg. 1844, 347 Note; Kraatz Ins. D. II, 613; Muls. et Rey Brévip. 1877, 365; Ganglb. Käf. M. II, 487).

Very closely allied to fulvipes, occasionally a little larger and broader; like same black with (ordinarily) yellowish-red elytra and reddish-yellow legs; for the rest recognizable by the following deviations:

Antennae slender, longer and slenderer than in fulvipes, their middle and next-last joints a little longer than broad, only their first joint, rarely also the second reddish-yellow; pronotum feebly iridescent; elytra with especially fine and dense punctation, dully-glistening, most often yellowish-red, but sometimes entirely, or at least anteriorly black; abdomen with very dense and fine punctation, abdomen and elytra with denser and finer punctation than in fulvipes; legs reddish-yellow, in the form with black elytra, brownish (var. varipes Muls.). L. 6-7 mm.

Distributed in Middle Europe. On beaches under seaweed and stones, in the inner Europe also at salt lakes. In this country rare and local; in the southern part of Sjaelland and in Lolland-Falster here and there at the coasts at times numerous, it is also found at Copenhagen, Boserup, and Aarhus.

5th Series: Pronotum with 8-12 Punctures in each Dorsal Row.

43. Ph. puella Nordm.

(Nordm. Symb. 101; Erichs. Käf. Mk. Br. I, 472; Gen. Spec. Staph. 493; Kraatz Ins. D. II, 620; Thoms. Skand. Col. II, 162; Muls. et Rey Brévip. 1877, 374; Ganglb. Käf. M. II, 458).

In appearance not unlike carbonarius, however somewhat smaller, and is for that matter easily identified by the punctation of head

and pronotum, and by the large head of ♂.

Glistening black; head and pronotum polished, elytra greenish with bronze-lustre, these and the abdomen finely haired.

The head in the ♀ is rounded-square and as broad as pronotum, in the ♂ broadly square, large and most often broader than pronotum, in both punctated with many robust, partly in rows arranged punctures, which are densest posteriorly, and which together enclose a triangular, smooth spot right in middle of forehead. Eyes are shorter than the temples; antennae rather robust, their middle and next-last joints transverse; pronotum narrower than elytra, as broad as long, not narrowing anteriorly, with 7-9 rather robust punctures in each dorsal row, and at least 8-12 scattered, robust side-punctures; elytra a little longer than pronotum, with dense and rather robust punctation; abdomen finely and rather densely punctated; fore-tibiae feebly curved; fore-tarsi in both sexes simple; first joint of hind-tarsi as long as the claw-joint. L. 8-9.5 mm.

In the ♂ the abdominal sixth ventral joint at tip with obtuse-angular incision.

Distributed in Middle and North Europe, but everywhere, also here, rare; mostly on woodland ground at manure, rotting fungi and carrion, also at outflowing treesap and in alluvium. (Randers, Horsens, Vejle, Taps; Bremersvold, Lolland, Knutenborg; Sorø, Dyrehaven at Copenhagen, Hillerød and several other places).

44. Ph. punctus Gravh.

(Gravh. Micr. 20; Erichs. Käf. Mk. Br.I, 477; Gen. Spec. Staph. 498; Kraatz Ins. D. II, 618; Thoms. Skand. Col. II, 161; Muls. et Rey Brévip. 1877, 371; Janglb. Käf. M. II, 458. - multipunctatus Mannh. Brach. 31).

Of same size as the preceding species or a little larger, especially recognized by the numerous side-punctures of pronotum.

Black, glistening; elytra with feeble ore- or greenish bronze-lustre, not infrequent with broadly red outer corners and sides (ab. binotatus Gravh.), elytra and abdomen rather finely haired.

The head is rounded-square, narrower than pronotum, with scattered and rather robust punctation, at middle smooth; eyes shorter than temples; antennal next-last joints as long as broad; pronotum narrower than the elytra, as long as broad, hardly narrowing anteriorly, at middle polished; its dorsal punctate rows somewhat irregular, with 12-16 rather fine punctures in each, and not acutely separated from the numerous (30-40), rather densely set side-punctures. Elytra are somewhat longer than pronotum, with dense and rather fine punctation; abdomen with less dense, but finer punctation; fore-tibiae straight and the first joint of hind tarsi longer than the claw-joint. 1.8-10mm.

In the ♂ the fore-tarsi are strongly dilated, and the abdominal sixth ventral joint at tip with a rather deep, angular incision.

Distributed in Europe, but rare in the northern part, and apparently not found in Norway. In this country rare and local; at the shores of lakes, rivers and other waters, or in wet ditches under alluvium and stones. (Brønderslev, Harboøre, Gravlev meadow; "T. Tiissø,

Sorø, Øbjerggaard; Kopenhavn in Falster; Maribo).

The form with partly red elytra occurs together with the typical form, but is much rarer than this.

2. Subgenus Gabrius Steph.

45. Ph. vernalis Gravh.

(Gravh. Mon. 75; Erichs. Käf. Mk. Br. I, 470; Gen. Spec. Staph. 478; Kraatz Ins. D. II, 606; Thoms. Skand. Col. II, 170; Muls. et Pey Brévip. 1877, 394; Ganglb. Käf. M. II, 459).

Rather small and elongate, larger than the following species of this subgenus, and within this genus, inter alia, recognizable by the number of punctures in the dorsal rows of pronotum, and by the proportionately short elytra.

Pitch-black or pitch-brown; head and pronotum polished; elytra and abdomen glistening, finely haired, elytra and pronotum often reddish-brown; antennal first joint, mouth-parts, and legs reddish-yellow.

The head is oblong, narrower than pronotum; temples at least twice as long as the very small eyes; antennae rather short and robust, their middle and next-last joints transverse; pronotum posteriorly scarcely as broad as elytra, longer than broad, anteriorly feebly narrowing, with 5 fine punctures in each dorsal row, and with 5 side-punctures; elytra a little shorter than pronotum, rather densely and coarsely punctated; abdomen also densely, but finely punctated; fore-tibiae finely spiniferous, fore-tarsi in both sexes simple, first joint of hind tarsi as long or fully as long as the claw-joint. L. 6-7 mm.

In the ♂ the abdominal sixth ventral joint with deep acute angular

incision; the corners of the incision are prolonged with a rounded off, half membranous lobe.

Distributed in Europe and North Asia; here in Denmark rather rare; under leaves and moss in forests, also in alluvium, it has a few times been found with Formica rufa, in and about the mounds of this (auth.). Erichson and Kraatz record that it effuses a peculiar sweetish odor.

46. Ph. splendidulus Gravh.

(Gravh. Micr. 41; Erichs. Käf. Mk. Br. I, 470; Gen. Spec. Staph. 478; Kraatz Ins. D. II, 608; Thoms. Skand. Col. II, 170; Muls. et Rey Brévip. 1877, 400; Ganglb. Käf. M. II, 459).

A narrow and uniformly broad species, in appearance not unlike a Xantholinus; recognized especially by small eyes, form of the pronotum, and the numbers of punctures in its dorsal rows.

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Pitch-black, glistening; head and pronotum polished; elytra most often pitch-brown with reddish suture, elytra and abdomen very finely haired; abdominal tip, posterior margins of abdominal joints, antennae, mouth-parts, and legs reddish-yellow.

The head (Fig. 117) is oblong square, hardly as broad as pronotum; eyes only half as long as temples; antennae rather short, their middle and next-last joints transverse; pronotum oblong, slightly narrowing posteriorly, with 5 fine punctures in each dorsal row, and with 5 side-punctures; elytra as long as pronotum, with rather coarse and not dense punctation; fore-tarsi in both sexes simple; first joint of posterior tarsi shorter than the claw-joint. L. 5 mm.

In the ♂ the abdominal sixth ventral joint with obtuse-angular incision. Fig. 117. Philonthus splendidus Gravh.

Distributed in Europe, not rare in this country in wooded regions, under bark and moss on stubs and trunks, which have been attacked by insects; occasionally it has also been found in the mounds with Formica rufa. (N. P. Jørgensen).

47. Ph. thermarum Aube.

(Aube Ann. Soc. Ent. Fr. 1850, 316; Kraatz Ins. D. II, 608; Muls. et Rey Brévip. 1877, 402; Janglb. Käf. M. II, 460).

Small and delicate, the smallest species of the genus, besides this, easily identified by the number of punctures in the dorsal rows of pronotum, and by the color of elytra.

Pitch-black, glistening; head and pronotum polished; pronotum reddish-brown, elytra brownish-yellow, these and abdomen thinly haired, tip of abdomen, and outer part of antennae yellowish-brown, the first two-three antennal joints, mouth-parts, and legs yellow.

The head oblong with almost straight sides, small eyes, longer temples, and almost rectangular, slightly rounded temple-corners; antennae slender, their next-last joints feebly transverse; pronotum narrower than elytra, longer than broad, of even breadth with rounded off corners, dorsum with 5 fine punctures in each dorsal row, and with 4-5 side-punctures; elytra as long as pronotum, scattered and rather coarse punctation; abdomen with dense and very fine punctation; fore-tarsi in both sexes simple; first joint of hind tarsi shorter than the claw-joint. L. 3 mm.

In the ♂ the abdominal sixth ventral joint with obtuse angulate emargination.

Distributed in Middle Europe and warmer climates; in this country preferably in hothouses and fermenting, warm compost in larger gardens, very local (Rosenborgs and Landbohøjskolens Gardens in Copenhagen, Øbjerggaard), presumably imported.

48. Ph. exiguus Nordm.

(Nordm. Symb. 105; Erichs. Käf. Mk. Br. I, 475; Gen. Spec. Staph. 491; Kraatz Ins. D. II, 615; Thoms. Skand. Col. IK. 186; Muls. et Rey Brévip. 1877, 405; Ganglb. Käf. M. II, 461).

Narrowly fusiform; among the closest allied species recognizable especially by the form of pronotum and the number of punctures in its dorsal punctate rows, also by the metallic lustre of elytra.

Black, glistening; head and pronotum polished; elytra with feeble ore- or greenish bronze-gloss, elytra and abdomen sparsely haired; legs brownish yellow.

The head oblong; temples much longer than the small eyes; antennae not long, their next-last joint feebly transverse; pronotum narrower than elytra, somewhat longer than broad, anteriorly feebly narrowing, with 6 punctures in each dorsal row, and with 5-6 side-punctures, all punctures fine; elytra as long as pronotum, with rather coarse and dense punctation; abdomen very finely, but not densely punctated; fore-tarsi in both sexes simple; first joint of hind tarsi almost as long as the claw-joint. L. 5-6 mm.

In the ♂ the hind tibiae on inner side with long and dense hair;

abdominal sixth ventral joint at tip broadly emarginate, at middle feebly carinated.

Distributed in Middle and North Europe; it is here rare or very rare, in alluvium at lakes and on damp ground. (Skörping and v. Madum Lake south of Aalborg, Panders; Øbjerggaard in South Sjaelland; Rønne).

49. Ph. nigritulus Gravh.

(Gravh. Micr. 41; Kraatz Ins. D. II, 616; Muls et Rey Brévip. 1877, 411; Ganglb. Käf. N. II, 460. - aterrimus Gravh. Micr. 41; Erichs. Käf. Mk. Br. I, 476; Gen. Spec. Staph. 492; Thoms. Skand. Col. II, 170).

Small and slender, next after thermarum our smallest species, recognized especially by the number of punctures in the punctate rows of pronotum, and longer elytra than in the following species.

Black, glistening; head and pronotum polished; elytra black or brownish, elytra and the abdomen finely haired; antennal base, and the mouth-parts brownish or brownish yellow; legs reddish-yellow, tibiae however often brownish.

Head oblong, with small eyes and almost twice as long temples, in the ♀ a little narrower than pronotum, in the ♂ as broad as same; antennae rather slender, their next-last joints feebly transverse; pronotum narrower than elytra, almost 1½ times as long as broad, anteriorly hardly narrowing, with 6 punctures in each dorsal row, and with 5 side-punctures; elytra somewhat longer than pronotum, however they vary somewhat in length, with rather coarse and not dense punctation; abdomen finely and rather densely punctated; fore-tarsi in both sexes simple; first joint of hind tarsi short, shorter than the claw-joint.

L. 4-5 mm.

In the ♂ the abdominal sixth ventral joint at tip feebly emarginate.

Distributed in the majority of continents; it is here very common on all kinds of ground, under the plant-cover and at rotting plants, often numerous in alluvium.

50. Ph. trossulus Nordm.

(Nordm. Symb. 102; Kraatz Ins. D. II, 616; Thoms. Skand. Col. II, 171; Muls. et Rey Brévip. 1877, 413; Ganglb. Käf. M. II, 460).

Most often larger and more robust than nigritulus, to which it in other respects is very closely allied, and of which it sometimes is considered a variety (Fauvel). It is separated by the following, oftenest distinct deviations:

The head is broader, in the ♀ as broad as pronotum, in the ♂ broader than pronotum, rounded off square; pronotum proportionately broader, either of even breadth or posteriorly feebly narrowing; elytra shorter, at most as long as pronotum, most often a little shorter than same.

L. 4.5-5.5 mm.

Distributed especially in North Europe; in this country however it is rare or local, on damp ground and in alluvium. (North Sjaelland in several places, Sorø, Fakse; Nykøbing, F.; Odense).

A closely allied, a little larger species, Ph. astutus Er., separates from the two preceding species mainly by this, that the middle punctures in the transversal row of the forehead are set obliquely before the outer ones, that the third antennal joint is longer than in nigritulus and trossulus, almost 1½ times as long as the second, and that the first joint of hind tarsi is as long as the claw-joint. L. 6-6.5 mm. (Kraatz, Ganglb.).

It is distributed in Middle Europe and may possibly also be found in Denmark.

A couple of other, likewise heretofore rather closely allied, smaller species are Ph. tenuis Fabr. and pullus Nordm. They are separated from all the preceding Philonthus species in that the last joint of maxillary palpi is conically tapering, and not longer than the next-last, and they are therefore now treated as a separate subgenus, Rabigus (Muls. et Rey; Ganglb. et. al.). Like the species of subgenus Rabigus they have small eyes and long temples, and like nigritulus et. al. with 6 punctures in each of the dorsal rows of pronotum, but in both the first joint of hind tarsi is longer than the claw-joint, and in the ♂ the fore-tarsi are strongly dilated:

Ph. tenuis Fabr. (Ent. Syst. I, 2, 528; Kraatz Ins. D. II, 617) is slender, black, glistening; pronotum, elytra, with the exception of their base or their anterior half part, also first joint of antennae, and the legs reddish-yellow. Sometimes the elytra are entirely black, with the exception of a narrow red posterior margin. (ab. gracilis Letz.) The antennae rather fine; elytra distinctly shorter than the pronotum. L. 4.5-5.5 mm.

It lives on sandy river- and lake shores, distributed in Middle Europe and also found in Finland, but not heretofore found here or in Sweden and Norway.

Ph. pullus Nordm. (Symb. 104; Kraatz Ins. D. II, 617) is rather slender and cylindric, black, glistening; elytra feebly ore- or bronze-lustrous; legs pitch-black or brown. Antennae rather thick; head long

oval; pronotum narrower than elytra; these fully as long as pronotum, densely and finely punctate, with long gray hair. L. 4.5-5.5 mm.

On sandy ground under moss and fagot; rare in Germany, very rare in England, and heretofore not found in Denmark or in the rest of northern Europe, and presumably less likely than tenuis.

70. Genus Cafius Steph.

(Steph. Ill. Brit. V, 245; Thoms. Skand. Col. II, 152 (ex parte); Muls. et Rey Brévip. 1877, 420; Tanglb. Käf. M. II, 462, (ex parte)).

Like in Philonthus the head is posteriorly strongly neck-formedly constricted, last joint of maxillary palpi is a little longer than the next-last and smoothly tapering, and pronotum with two, often conspicuous longitudinal punctate rows; but Cafius differs from Philonthus mainly in that; pronotum is posteriorly narrowing, its sides behind the middle produced, and the epipleura anteriorly less strongly inflexed, therefore partly visible from the sides, that the elytra are longer, and that the first four joints of fore-tarsi are dilated, strongly in the ♂, less strongly in the ♀. First joint of hind tarsi is long, longer than the claw-joint.

Body of rather even breadth, and somewhat flat; head almost square, with rounded off temples, as broad as, or broader than pronotum; pronotum with 1-4 punctures in each dorsal row and is narrower and shorter than the rather flat elytra; abdomen of even breadth, only narrowing posteriorly.

In Europe 3 species are found, of which one in Denmark. It lives exclusively at the ocean beach under seaweeds, in appearance it some-

what resembles the Xantholinus species, and like these curls itself halfway up. Erichson and Kraatz describe our species under Philonthus.

1. C. zentholoma Grach.

(Gravh. Mon. 41; Erichs. Gen. Spec. Staph. 452; Kraatz Ins. D. II, 594; Thoms. Skand. Col. II, 152; Muls et Pey Brévip. 1877, 427; Langlb. Käf. M. II, 463).

Easily identified by the large, pitlike punctures of pronotum and head, and by the very densely punctated elytra.

Black; head and pronotum polished; pronotum often brownish iridescent; elytra dull, abdomen feebly glistening; elytra with dense, prostrate and smooth hair, abdomen less densely haired, but with two, more densely haired stripes at middle; the deflected sides of elytra brownish yellow; legs reddish-brown. Occasionally the pronotal sides, elytra, and scutellum brownish-red, and abdomen pitch-brown with brownish-red margins and spots. (v. variegatus Er.).

The head is oblong-square with rounded off temple-corners (Fig. 118), in the ♀ and less robust ♂♂ as broad as pronotum, in more robust ♂♂ remarkably large and considerably broader than pronotum, between the eyes with two large pitlike punctures and a short longitudinal impression between these, ----- (Page 421) ----- at the eyes and on the temples with rather dense, and especially in large ♂♂ coarse punctation; antennae rather robust, their next-last joints however not strongly transverse. Pronotum is much narrower than the elytra, about as long as broad, posteriorly narrowing, in large ♂♂ very strongly narrowing, its dorsum with two longitudinal punctate rows, each

with 4 deep and coarse, pitlike punctures, but outside of these with only one large bristle-bearing puncture near the side-margin and a few scattered punctures at the anterior corners. Elytra are a $\frac{1}{2}$ time longer than pronotum, with fine, and especially dense punctation, and in connection with their dense hair vestiture therefore dull; abdomen likewise with especially dense, rather fine punctation, each of its first five free dorsal joints with a single larger puncture on each side. L. 7-9 mm.

In the ♂ (see above) the abdominal fifth ventral joint slightly emarginate at tip, the sixth rather deeply incised, and with a feeble, smooth groove in the middle-line.

Fig. 118. Cafius xantholoma Gravh.

Distributed at the coasts of North and Middle Europe. Everywhere at our coasts under seaweed, sometimes numerous. The form with red elytra (v. variegatus Er.) is rare in this country (Bo, Hornholm and other places).

A somewhat larger species, C. cicatricosus Er., in which pronotum has only 1-2 pitlike dorsal punctures on each side of the middle, is found at the coasts of England, France, & Italy.

71. Genus Pemus Holme.

(Holme Trans. Ent. Soc. Lond. II, 1837, 64; Ganglb. Käf. M. II, 463 (Subg.). - Pseudidus Puls. et Pey Brévip. 1877, 430).

From Philonthus and Cafius easily separated by this: the head and pronotum with fine, scattered, prostrate hair, the ground surface den-

sely shagreened, dull (or opaque), and that they, except for a smooth middle-line, are densely punctated. Otherwise same as Cafius.

To this genus only 1 European species, widely distributed at the European coasts, where it lives under rotting seaweeds; also found in Denmark.

1. R. sericeus Holme.

(Holme Trans. Ent. Soc. Lond. 1837, 64; Thoms. Skand. Col. II (Cafius), 153; Muls. et Rey Brévip. 1877, 433; Langlb. Käf. N. II, 462).

Narrow and of equal breadth, in appearance somewhat like a Xantholinus, especially identifiable by the above stated characteristics; but as a whole otherwise very variable.

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Mulsant et Rey divides it into 3 species: sericeus, pruinosis, and filum, of which however the latter two are most reasonably included as varieties of the typical form.

The typical form is black, dull; head and pronotum with very fine and scattered, elytra and abdomen with dense, prostrate and short, silky, grayish-glistening hair; antennae toward the tip, or entirely, brownish, legs or at least their knees and tarsi brownish-red, more rarely reddish-yellow.

The head as broad as pronotum, fully as long as broad, with small eyes and longer temples with rounded off rectangular corners; antennae rather slender, their next-last joints hardly transverse; pronotum narrower than elytra, longer than broad, with almost parallel sides or posteriorly feebly narrowing, pronotum and head with densely

shagreened surface, and on sides with rather dense and coarse, but not deep punctation, and only a narrow, on the pronotum slightly elevated, middle-line without punctation, and shining. Elytra considerably longer than pronotum, and together with abdomen especially densely and finely punctated and shagreened, and therefore dull. L. 5-6 mm.

In the ♂ the abdominal sixth ventral joint at tip angularly emarginate.

The variety pruinus Erichs. (Gen. Spec. Staph. FlC; Muls. et Rey Brévip. 1877, 435) differs from the typical form in that, the head and pronotum are less dull, antennae and legs lighter, the head broader, pronotum posteriorly more narrowing, elytra shorter, and abdomen less densely and finely punctated. - Var. filum Kieev. (Muls. et Rey Brévip. 1877, 437) is smaller than the typical form, and with lighter antennae and legs; the third antennal joint is shorter, and pronotum posteriorly slightly narrowed. L. 3.5 - 4 mm.

The typical form on beaches under seaweed, but very local; most frequent at the coasts of Sjaelland and M~~en~~; I have found it in enormous numbers at Leget~~ø~~ across from Frederikshavn, singly at Limfjorden; v. pruinus and v. filum have seemingly heretofore not been found here.

72. Genus Actobius Fauv.

(Fauv. Faun. Gall. rhen. III, Suppl.. 72; Langlb. Käf. N. II, 465. - Pemus Thoms. Skand. Col. 167; Muls. et Rey Brévip. 1877, 453).

Closely allied to the preceding species, but separated from this mainly by, that the antennal second joint is thickened, as thick as the

first, and much thicker than the thin third (Fig. 119), that pronotum is glistening, and that the hind tarsal first joint is short, considerably shorter than the claw-joint.

In Europe two species occur on damp ground, and of these one is found in this country.

Fig. 119. Head of Actobius cinerascens Gravh.

1. A. cinerascens Gravh.

(Gravh. Micr. 49; Erichs. Käf. Mk. Br. I, 478; Gen. Spec. Staph. 509; Kraatz Ins. D. II, 622; Thoms. Skand. Col. II, 167; Muls. et Rey Brévip. 1877, 459; Ganglb. Käf. M. II, 465).

Rather of equal breadth, narrow and slender, in appearance somewhat like a Lathrobium, identified by the above mentioned characters also by the dullness of elytra and abdomen.

Black, head dull, and pronotum glistening, with very scattered and fine hair; elytra and abdomen dull, with fine and dense, gray hair of silky shine; antennae pitch-brown, their base, and the legs brownish-red or reddish-yellow.

The head is as broad as pronotum, rounded-square, with small eyes and longer temples, finely and densely punctated, at middle smooth; antennae rather slender, their second joint thickened strongly toward the tip, the third thin, the next-last fully as long as broad; pronotum narrower than elytra, longer than broad, feebly narrowed posteriorly, sides of dorsum with rather robust, but not dense punctation, along the middle smooth; elytra considerably longer than pronotum,

elytra and abdomen with extremely fine and dense punctation, due to this and the hair vestiture therefore dull. The first 4 joints of fore-tarsi are strongly dilated in the ♂, less strongly in the ♀; hind-tarsi rather short, the first joint shorter than the claw-joint. L. 4.5 -5.5 mm.

In the ♂ the abdominal sixth ventral joint at tip feebly emarginated.

Distributed, and on damp ground, in alluvium, under leaves and moss everywhere rather frequent. - A little smaller species, signaticornis Muls. et Rey, with coarse and scatteredly punctated, glistening head is found in Middle Europe.

73. Genus Bisnius Thoms.

(Thoms. Skand. Col. II, 168; Muls. et Rey Brévip. 1877, 439. - Neobisnius Ganglb. Käf. M. II, 464).

Closely allied to Actobius, with glistening, on both sides punctated head and pronotum, and with short hind-tarsi, in which the first joint is a little shorter than the claw-joint. It deviates in that the antennal second joint is not thicker than the third, elytra and abdomen are more glistening, and only the first three joints of fore-tarsi are dilated, strongly in the ♂, feebly in the ♀. The body is narrow and of equal breadth, and the species have a Lathrobium-like appearance (Fig. 120).

Three species are living in North and Middle Europe; of which two are found in this country, the third is not unlikely.

Key to the Species.

1. Antennae entirely yellow. Head a little broader than long. L.
4-4.5 mm..... 1. B. villosulus Steph.
- Antennae yellow only at base, elsewhere dark. Head as long as broad
or longer..... 2.
2. Head as long as broad, square with slightly rounded-off temple-
corners. L. 3.5-4.5 mm..... 2. B. procerulus Gravh.
- Head as long as broad with strongly rounded-off temple-corners.
L. 4-4.5 mm..... 3. B. prolixus Erichs.

1. B. villosulus Steph.

(Steph. Ill. Brit. V, 251; Ganglb. Käf. K. II, 464. - elongatulus Erichs. Käf. Nk. Br. I, 479; Gen. Spec. Staph. III; Kraatz Ins. D. II, 623; Thoms. Skand. Col. II, 162; Muls. et Rey Brévip. 1877, 450).

Narrow, slender and of equal breadth, easily identified by the color of the antennae.

Glistening black; head and pronotum with very scattered, elytra and abdomen with denser hair vestiture; elytra brown or pitch-brown, often with lighter posterior margin; antennae, mouth, and legs reddish-yellow.

The head is as broad as or in the ♂ even broader than pronotum, distinctly broader than long, square, with slightly rounded-off temple-corners, small eyes, rather long temples, and narrow neck, on sides rather robustly, or in the ♂ coarsely, but not densely punctated, at middle smooth; antennae rather robust, their next-last joints strong-

ly transverse. Pronotum is narrower than elytra, longer than broad and posteriorly hardly narrowed, with straight sides, the sides punctated like the head, smooth at the middle; elytra a little longer than pronotum, with rather robust and dense punctation; abdomen likewise rather densely but more finely punctated, its first three free dorsal joints at base narrowly transversally grooved depressed, transversal grooves smooth in bottom. L. 4-4.5 mm.

In the ♂ (see above) the abdominal sixth ventral joint at tip feebly emarginated.

At the edge of lakes, brooks and water-holes, distributed in Europe; in this country it has heretofore only been found here and there on the islands, and mostly singly (Frederiksberg Garden, Soro, Nykøbing F., Maribo, Odense); also found at Skaane and at Kristiania.

2. B. procerulus Gravh.

(Gravh. Mon. 98; Erichs. Käf. Mk. Br. I, 479; Gen. Spec. Staph. 511; Kraatz Ins. D. II, 624; Thoms. Skand. Col. II, 169; Muls. et Rey Brévip. 1877, 442; Ganglb. Käf. M. II, 465).

Muchlike preceding species, from which it differs in that the antennae are pitch-brown, and only reddish-yellow at base, that the legs are darker, brownish-yellow. The head (Fig. 120) as long as broad, pronotum posteriorly feebly narrowed, antennal next-last joints less strongly transverse, and that the abdominal first three free dorsal joints are punctate at base and in the transversal grooves. L. 3.5-4.5 mm.

Very rare; at water-edges (Brede at Copenhagen, Nykøbing F., V. Ulslev, Loll., Odense); like the preceding also in Skaane and at Kristiania. Distributed in Europe. - A variety, v. semipunctatus Fairm.

-with unicolorous brown, finer and denser punctate elytra, are known from North America and Australia procerulus (Ganglb.). . .

Fig. 120. Bisnius procerulus Gravh.

3. B. prolixus Erichs.

(Erichs. Gen. Spec. Staph. 510; Kraatz Ins. D. II, 625; Muls. et Rey Brévip. 1877, 445; Ganglb. Käf. M. II, 465).

Very closely allied to both of the two preceding species, but a little more slender, and most often with lighter elytra, which as a rule are red or yellowish-red, at base with more or less extensive black, rarely entirely brown or black; antennae black, their base, mouth-parts, and legs yellowish-red.

The head is a little longer than broad with strongly rounded-off temple-corners; pronotum a little narrower and longer than in procerulus, and its abdominal first three free dorsal joints in transversal grooves at base with coarser and denser punctation. L. 4-4.5 mm. (Kraatz Ganglb.).

One in Middle Europe, also in England at miry water-edges distributed, and not very rare species; heretofore not found in this country nor in the rest of the North.

3. Division Kantholinina.

Prosternum anteriorly dilated with a moveable, rounded-off, often emarginate, or in the middle-line finely carinated, antesternal plate*) (Mulsant & Rey) (Fig. 121). Antennae inserted near, or very near to

each other, most often closer together than to the eyes. - The body is elongate, of equal breadth, and most often narrow; head longer than broad, with small eyes and long temples, posteriorly as a rule strongly, or very strongly neck-formedly constricted; genae most often not margined; pronotum longer than broad, most often narrowed posteriorly, its epipleura almost horizontal; in the true Xantholinids one suture of elytra lies over the other, and the antennae are after the long first joint, more or less geniculate; legs rather short.

Fig. 121. Head and prosternum of Xantholinus glabratus Gravh.
Ventral view. a antesternal plate.

Key to Genera.

1. Elytral sutures contiguous, straight. Antennae not, or only feebly geniculate: (Subdivision Othiina) 2.
- One suture of elytra lies over the other. Antennae after the long first joint distinctly geniculate: (Subdivision Xantholinina s. str.)..... 3.
2. Sutural groove of elytra either feeble or entirely obliterated.
Labrum deeply cleft at middle. Hind-tibiae distinctly spiniferous..... 74. Othius Steph.
- Sutural groove of elytra distinct and sharp. Labrum at middle with angular incision. Hind-tibia not, or indistinctly spiniferous 75. Baptolinus Kr.
3. Last joint of maxillary palpi not subulate, about as thick as the next-last. The forehead anteriorly with 2 more or less sharp

grooves, occasionally also with 2 feeble grooves:.....

..... 76. Xantholinus Serv. .

- Last joint of maxillary palpi subulate, much finer than the next-last. The forehead anteriorly with 4 deep grooves:.....

..... 77. Leptacinus Erichs.

(Subdivision Othiina).

74. Genus Othius Steph.

(Steph. Ill. Brit. V. 253; Erichs. Käf. Mk. Br. I, 420; Gen. Spec. Staph. 294; Knechtz Ins. D. II, 653; Thoms. Skand. Col. II, 185; Muls. et Rey Brévip. Xanthol. 1877, 3; Ganglb. Käf. M. II, 468).

The body (Fig. 122) is elongate, narrow and of equal breadth; the head oblong oval, with labrum deeply cleft at middle, and densely bristle-haired, small eyes and long temples, posteriorly with neck-formed constriction; the neck short and about half as broad as the head; antennae rather short, after the first joint only, feebly geniculated, inserted as far from each other as from the eyes, their first joint longer than the two following together, the third as long as, or longer than the second, the following short, the next-last transverse; last joint of maxillary palpi somewhat shorter and narrower than the next-last, tapering.

Pronotum longer than broad, posteriorly feebly narrowing, along the side-margins with a fine, but distinct ridge, posteriorly rounded-off, on the dorsum, besides a few scattered punctures nearest to the fore-corners, with two broadly separated dorsal punctate rows, each with

3 punctures, of which the foremost are placed closely to the fore-margin, the middle one before the middle, and the hindmost behind the middle. Elytral sutures are straight and contiguous, the sutural groove obliterated or insignificant; abdomen of uniform breadth, or slightly tapering posteriorly, the transversal grooves at base of its dorsal joints feeble, straight and simple. Antesternal plate of prosternum is short, yet distinct, at middle finely carinated; middle-coxae not broadly separated; the posterior and especially the middle-tibiae are spiniferous, the anterior ones most often not; the first four fore-tarsal joints are more or less dilated, hind-tarsal first joint longer than the second, shorter than the claw-joint.

In the northern Middle Europe 5-6 species are living, of which 3 are living in this country, under moss and leaves, and in company with ants.

Key to Species.

1. Antennal third joint considerably longer than the second. Elytra brownish-red. Large species. L. 11-14 mm: 1. O. punctulatus Boeze.
- Antennal third joint not, or only insignificantly longer than the second. Much smaller species. 2.
2. Head distinctly narrower than pronotum; pronotum as a rule vividly yellowish-red, rarely darker at middle. L. 5 mm.....
..... 3. O. melanocephalus Gravh.
- Head hardly, or not distinctly narrower than pronotum; pronotum pitch-brown with somewhat lighter sides. L. 5-6 mm.....
3. O. myrmecophilus Kiesw.

1. O. punctulatus Goeze.

(Goeze Ent. Beitr. I, 1777, 730; Ganglb. Käf. M. II, 469. -fulvipennis Fabr. Ent. Syst. I, 2, 537; Erichs. Käf. M. Br. I, 420; Gen. Spec. Staph. 295; Kraatz Ins. D. II, 654; Thoms. Skand. Col. II, 185; Muls. et Rey Brévip. 1877, C).

Easily identified by the size, and by the color of elytra.

Black, glistening; head and pronotum polished; elytra, abdominal tip, antennae, mouth-parts and legs more or less clearly brownish-red, elytra and abdomen with fine brownish hair. Sides of pronotum, and the posterior margins of abdominal joints are often reddish-brown.

The head (Fig. 122) is as broad as pronotum, oblong-oval, on sides with scattered and somewhat uneven, robust punctation, and anteriorly with a feeble transversal impression between the eyes; antennae shorter than head and pronotum together, their third joint almost 1 time longer than the second, the next-last joints rather strongly transverse; pronotum as broad as the elytra, 1/3 longer than broad, posteriorly scarcely narrowed, and with distinctly ridged side-margins, the punctures in the dorsal rows large. Elytra are a little shorter than pronotum, with scattered and rather robust punctation; abdomen finely, and anteriorly rather dense, posteriorly scattered punctation. In both sexes the fore-tarsi are rather strongly dilated. L. 11-14 mm.

In the ♂ the abdominal sixth ventral joint at tip very slightly emarginated, the seventh strongly roundedly emarginate.

Distributed in Europe, and mostly on forest-ground is frequent here, under moss and leaves.

The larva of O. punctulatus in the form of head and pronotum is

very much like the beetle, and is not infrequently found among the sifted material from forest ground and in alluvium. It is reared by Mr. Rosenberg and Gand. "W. Schlick.

2. C. melanocephalus Gravh.

(Gravh. Mon. 107; Erichs. Käf. Mk. Br. I, 421; Gen. Spec. Staph. 295; Kraatz Ins. D. II, 656; Thoms. Skand. Col. II, 185; Muls. et Rey Brévip. 1877, 15; Ganglb. Käf. M. II, 470).

Identified by proportionately narrow head, pronotal color, and short elytra,

glistening; head and pronotum polished; the head with exception of the neck black, neck and pronotum vividly yellowish-red, occasionally brownish at middle; elytra yellowish-brown, or like the abdomen pitch-brown, both finely haired; antennae, mouth-parts, and legs reddish-yellow.

The head is much narrower than pronotum, oblong oval; antennal third joint only a trifle longer than the second, the next-last hardly transverse; pronotum as broad as elytra, posteriorly not narrowed, longer than broad, the foremost puncture in the dorsal rows are placed immediately at the anterior margin. Elytra are shorter than pronotum, with scattered and robust punctation; abdomen with very fine, and especially posteriorly, scattered punctation. L. 5 mm.

In the ♂ the fore-tarsi somewhat more strongly dilated than in the ♀, and the abdominal sixth ventral joint at tip less rounded than in same.

Distributed everywhere in North and Middle Europe, mostly on sandy

or gravelly ground, as well as in and about woods, common in this country.

3. O. myrmecophilus Kiesw.

(Kiesw. Stett. Ent. Ztg. IV, 1843, 308; Kraatz Ins. D. II, 658; Thoms. Skand. Col. II, 186; Muls. et Rey Brévip. 1877, 12; Ganglb. Käf. M. II, 471).

From melanocephalus, to which it in form, size, and punctuation etc. is very closely allied, it differs mainly in the following characters:

It is wingless; pronotum as well as the neck pitch-brown or yellowish-brown, the color of the body as a whole darker than in melanocephalus; The head is nearly as broad as pronotum; antennae rather robust, their next-last five joints distinctly transverse; on pronotum the foremost puncture in the dorsal rows are placed some distance from the anterior margin, about midways between this and the following puncture, and in the abdominal fifth free dorsal joint's posterior margin, that, in the Staphylinids usual fine, light membranous border, is wanting, presumably due to the wanting of flight-wings in the species. L. 5-6 mm.

Distributed in Europe, and in this country not rare, especially in woodland regions, often in company with ants, (Lasius fuliginosus et. al.), in hollow trees, under moss and leaves.

75. Genus Baptolinus Kr.

(Kraatz Ins. D. II, 659; Muls. et Rey Brévip. 1877, 21; Ganglb. Käf. M. II, 472. - Gyrophynus Thoms. Skand. Col. II, 186).

From Othius, this genus is separated mainly by, that the labrum

is not deeply cleft at middle, but only with an angular incision, that elytra has a deep sutural groove, that the abdominal transversal impression at base of the joints are double, and that hind-tibiae are not spiniferous. - Besides a few fine marginal punctures anteriorly pronotum has on each side a large dorsal puncture some distance from the anterior margin, and an other back of the middle; the antesternal plate at middle-line not grooved or carinated.

In Middle Europe are found 3, of which in Denmark, Sweden and Norway 2, closely allied species. They live in hollow trees in wood-crumbings and under bark.

Key to Species.

1. The head's temples with only few, 2-4 larger punctures. Elytra finely punctated. L. 6-8 mm..... 1. B. affinis Payk.
- The head's temples with many, 10-12 punctures. Elytra not distinctly punctate, but the surface with coriaceous sculpture. L. 6-7 mm. 2. B. pillicornis Payk.

1. B. affinis Payk.

(Payk. Mon. Staph. 24; Ganglb. Käf. M. II, 474. - alternans Gravh. Micr. 48; Kraatz Ins. D. II, 660; Thoms. Skand. Col. II, 187; Muls. et Rey Brévip. 1877, 27. - pillicornis var. b Erichs. Käf. Mk. Br. I, 422).

In several respects somewhat variable; but in relation to the following species easily identified, particularly by few punctures of the temples, the antennal proportionally rather long third joint, and by the distinct punctures of elytra.

Yellowish-red or reddish-brown; head and pronotum polished; elytra and abdomen glistening, scattered hair-vestiture; the head and elytra, except for the humeri, also the abdominal fourth and fifth dorsal joints black, often reddish-brown; antennae, mouth-parts, and legs reddish-yellow.

The head broadly square, as broad as pronotum, or broader (σ^1), with prominent mandibles, small, a little protruding eyes, rather long temples with simple punctation, and rounded-off corners, between the eyes with a transversal row of 4 punctures, of which the outmost on each side are placed close to the eye, or in broad-headed $\sigma^1\sigma^1$ some distance from the eye; the antennae longer than the head, rather robust, slightly thickened outwardly, their third joint distinctly longer than the second, the next-last joints rather strongly transverse. Pronotum a little narrower than elytra, posteriorly feebly narrowing, nearly 1½ times as long as broad, with exception of a few (in genus-description mentioned) dorsal and marginal punctures, without punctation and smooth; elytra as long as pronotum, somewhat convex and with deep sutural groove, with fine and scattered punctation, background-surface smooth; abdominal joints on sides with fine, and more or less scattered punctation. L. 6-8 mm.

In the σ^1 the head is more often broader than in the φ and fore-tarsi more strongly dilated, abdominal sixth ventral joint feebly emarginate.

Distributed in Europe; in this country mostly in wooded regions,

in hollow trees and stubs, in wood-crumblings, also under bark, as a whole rare and local.

2. B. pilicornis Payk.

(Payk. Mon. Car. App. 135; Erichs. Käf. Mk. Br. I, 421; Ger. Spec. Staph. 296; Kraatz Ins. D. II, 661; Thoms. Skand. Col. I, 187; Muls. et Rey Brévip. 1877, 25; Ganglb. Käf. M. II, 473).

It is separated from the closely allied, preceding species by the color, punctation of the temples, and the sculpture of the elytra.

Black, head and pronotum polished, elytra and abdomen glistening, sparsely haired; humeri, and often also the sutures and margins of the elytra, also tip of abdomen, and posterior margins of its foremost joints, also antennae, mouth-parts, and legs brownish, yellowish-red.

Head somewhat broader than pronotum, posteriorly less rounded-off than in affinis, temples with 10-12 somewhat irregular large punctures; antennal third joint scarcely longer than the second; pronotum shorter than in affinis, and somewhat less convex; elytra hardly punctated, but their surface with coriaceous sculpture, and occasionally with a suggestion of three rows of widely spaced, larger punctures: one at the suture, one at middle, and one along the sides. Punctation of abdomen same as in the preceding species. L. 6-7 mm.

Distributed in North and Middle Europe. In Denmark heretofore only one specimen has been found, in Dronninglund Storskov in Vendsyssel under the bark of alder (E. Lövendal 19. 6. 1895). In Sweden and Norway it is rare.

(Subdivision Xantholinina s. str.)

76. Genus Xantholinus Serv.

(Serv. Encycl. Meth. X, 1825, 475; Erichs. Gen. Spec. Staph. 306; Kraatz Ins. D. II, 629; Thoms. Skand. Col. II, 169+Taurypterus 187+Nudobius 188; Muls. et Rey Brévip. 1877, 41, 36, 83; Ganglb. Käf. M. II, 477+Eulissus 474+Nudobius 475).

The body is elongate, narrow and of uniform breadth, often somewhat flat; head porrect, large, oblong, as broad as, or broader than pronotum, with small, or very small eyes, and long, sometimes planate temples, posteriorly with strongly neck-formed constriction; the neck very narrow; anterior margin of forehead at middle, between two round processes, tooth-formed prominent, its surface anteriorly at middle with two sharp, almost parallel grooves, most often also with two feeble, oblique side-grooves; antennae rather short, inserted close together, and much closer to each other than to the eyes, after the long, scape-formed first joint geniculate, their next-last joints transverse; last joint of maxillary palpi tapering, a little thinner than the next-last, but not subulate.

Pronotum is oblong, about as broad as elytra, most often narrowing posteriorly, its sides finely marginate, and the margin visible in longer or shorter distance, either to behind anterior corner, or only to behind middle, for the rest anteriorly bent in on the ventral side, the surface, with a single exception (X. fulgidus), with two punctate rows along the dorsum, and on sides either with an anteriorly curvate punctate row, or with scattered punctation. Elytra about as long as pronotum, and with flat sutural margins, of which the one, when closed,

lies over the other. Abdomen of equal breadth; its next-last (the ninth - seventh free) dorsal joints in the ♂ are at middle deeply cleft, and in the cleft the last (tenth) joint is visible; in the ♀ the ninth (next-last) joint is entire, and the tenth (when the tip is not drawn in) visible as abdominal tip. The middle-coxae are broadly separated, all tibiae finely spiniferous, fore-tarsi in both sexes simple.

Of those in North and Middle Europe distributed species, 9 or 10 are found in Denmark. The majority of these live under leaves and moss, or in compost, and at rotting plant-matter, a few are found with ants or under the bark of attacked trees. In danger the Xantholinids seek protection by "lie dead" they fold themselves up by bending the thorax in toward the metasternum and abdomen. - The beneath mentioned subgenera: Eulissus Mannh. (tauropterus Thoms.) and Mudobius Thoms. are often placed as separate, with Xantholinus s. str. coördinate genera.

Key to Subgenera and Species.

1. The pronotal fine, dorsal side-ridge, from the side, is only visible posteriorly, inasmuch as it behind the middle of side-margin is bent in on the ventral side 2.
- The pronotal dorsal side-ridge visible from the side until close behind the fore-corner, where it bends in on the ventral side: 3.
2. Pronotum without punctate rows on dorsum, with only a deepened punctate row or punctate groove on sides: 1. Subgenus Eulissus Mannh. - Elytra vivid red. L. 9-12 mm..... 1. X. fulgidus Er.

- Pronotum on the dorsum with two parallel longitudinal punctate rows, on each side with an anteriorly curved punctate row:
 - 2. Subgenus Nudobius Thoms.- Elytra and legs yellowish-red.
L. 7-8 mm. 2. X. lentus Gravh.
- 3. Sides of head beneath and back of eyes planate, densely punctate, behind eyes with a smooth, sometimes feeble ridge: 3. Subgenus Gyrohypnus Steph.....4.
- Sides of head smoothly convex, not densely punctate: 4. Subgenus Xantholinus s. str..... 6.
- 4. Pronotum with 4-6 punctures in each dorsal row..... 5.
- Pronotum with 8-10 punctures in each dorsal row, with modified shine. L. 6-7 mm. 4. X. angustatus Steph.
- 5. The lines which begin at the corners of the mouth, at middle of ventral side of the head are confluent forming from there to the neck the middle-line of the head, (gula suture). L. 7-8 mm..... 3. X. punctulatus Payk.
- The lines which begin at the corners of the mouth, approach each other at middle of ventral side of head, but are not confluent, they run side by side, narrowly separated, down to the neck. The species smaller and narrower, myrmecophil. L. 6-7 mm....
..... 5. X. atratus Heer.
- 6. Pronotal sides with a regular, of rather few (5-9) punctures consisting, and anteriorly outward curved row 7.
- Pronotal sides with scattered punctation, or that of many punctures consisting row, more or less interrupted 8.

7. Elytra with scattered punctation, red, L. 12-14 mm.....
..... C. X. glabratus Gravh.
- Elytra with three rather regularly punctated rows, and a few,
scattered punctures between these, brownish red or pitch-brown.
Species much smaller. L. 7 mm..... 7. X. Glaber Nordm.
8. Head posteriorly distinctly broadened, feebly ovate..... 9.
- Head posteriorly hardly broadened, oblong. L. 7-9 mm.....
..... 10. X. linearis Oliv. and longiventris Heer
9. Pronotum red, or its posterior part brownish. L. 8-11 mm
..... 8. X. tricolor Fabr.
- Pronotum rather unicolorous pitch-brown with feeble metal reflect-
ion. L. 7-10 mm..... 9. X. laevigatus Jac.

1. Subgenus Eulissus Mannh.

(Tauropterus Thoms.).

1. X. fulgidus Fabr.

(Fabr. Mant. Ins. I, 220; Erichs. Käf. PK. Br. I, 423; Gen Spec. Staph. 319; Kraatz Ins. D. II, 642; Thoms. Skand. Col. II, 188; Muls. et Rey Brévip. 1877, 38; Ganglb. Käf. M. II, 475).

In relation to the following species of the genus easily identified by: that pronotum is without punctate rows at middle of dorsum.

Deeply black, strongly glistening, pronotum polished; elytra red; Antennal outer part and legs pitch-brown, maxillary palpi, knees, and tarsi lighter. ----- (Page 432) -----

The head is large, broader than pronotum, longer than broad, straight-sided, with almost rectangular temple-corners, scattered punctation

with coarse, long punctures, which here and there, mainly on the sides, confluent, forming longitudinal grooves; antennal third joint much longer than the second; pronotum oblong, anteriorly as broad as elytra, narrowing posteriorly, only on the sides with an insignificantly punctated, slightly curved groove, and with few punctures anteriorly, elsewhere smooth and polished; the side-marginal fine ridge, is behind middle, bent in on the ventral side. Elytra are about as long as pronotum, each with a punctate row at middle, another along the suture, and a finer one along the side, intervals with simple punctation; abdomen with fine and sparse punctation. L. 9-12 mm.

In fermenting, warm compost, and at hothouse boxes in large gardens, sometimes in numbers, but in this country as a whole rare and local (Copenhagen, Sorø, Øbjerggaard; Nykøbing F.; Aarhus, Aalborg and several other places). Distributed in Europe, Asia, and North America. - The larva undoubtedly can be found in the same places as the beetle.

2. Subgenus Nudobius Thoms.

2. N. lentus Gravh.

(Gravh. Mon. 101; Erichs. Käf. Mk. Br. I, 426; Gen. Spec. Staph. 325; Kraatz Ins. D. II, 644; Thoms. Skand. Col. II, 188; Muls. et Rey Brévip. 1877, 89; Janglb. Käf. M. II, 476).

The pronotal fine side-margin "ridge" is like in fulgidus behind middle bent in on the ventral side, therefore only visible posteriorly; otherwise the species is recognized by the punctation of head and pronotum, and by the color of the legs.

Black, glistening; elytra and legs yellowish red, antennae and maxillary palpi brownish red.

The head is fully as broad as pronotum (Fig 123), oblong square, with slightly rounded-off temple-corners, at middle with simple, on sides with scattered and rather coarse punctation; antennal third joint short, scarcely longer than the second; pronotum anteriorly almost as broad as elytra, narrowed posteriorly, dorsum with two fine punctate rows, each with 7-9 punctures, and on sides with an anteriorly outcurved punctate row with a similar number of punctures; elytra fully as long as pronotum, with fine and scattered, here and there row-formed punctation; abdomen with very fine, scattered punctation. L. 7-8 mm.

Fig. 123. Xantholinus lentus Gravh.

North and Middle Europe. In Denmark rare or very rare, and heretofore apparently found only in pinaceous woods here and there in North Sjaelland (Rudehegn, St. Dyrehave at Hillerød, Tisvilde Hegn and other places). -----(Page 433) -----

It lives and develops under the bark of pinaceous trees, which are attacked by bark-beetles. In July I have found larvæ and pupæ, earlier, and later beetles. The larva is yellowish white with reddish-brown head and pronotum and its form shows relationship with imago (see further J. C. Schiødte Nat. Tidsskr. 3. R. 3.B. 1864, 65, 201 Tab. IX and X). It is very agile and flits swiftly, with forward and backwards subtle motions, about in the burrows.

3. Subgenus Gyrohypnus Steph.

3. X. punctulatus Payk.

(Payk. Mon. Staph. 30; Erichs. Käf. Mk. Br. I, 426; Gen. Spec. Staph. 328; Kraatz Ins. D. II, 638; Thoms. Skand. Col. II, 189; Muls. et Rey Brévip. 1877, 75; Janglb. Käf. M. II, 480.- stratus Thoms. Skand. Col. II, 190).

Longer and especially broader than the following species, angustatus, besides easily identified by less punctures in the pronotal punctate row, also by the stronger gloss of pronotum.

Black, glistening; elytra most often with feeble, greenish metallic reflection; antennal outer part, maxillary palpi, and legs pitch-brown or brownish-red.

The head is almost as broad as long, almost as broad as pronotum, with ventrally planate, to the fore feebly converging sides, and almost rectangular, slightly rounded-off temple-corners, and rather small eyes, the middle with fine and simple punctation, almost smooth, elsewhere rather coarsely and densely punctated, with here and there confluent punctures forming fine longitudinal stripes, and with one, oftenest distinct, smooth ridge at side behind the eye; grooves of the forehead anteriorly rather deep; on ventral side of head, those from the mouth-corners issuing deepened lines are confluent at middle, forming from there to the constriction of the head, its middle-line (gula suture); antennal third joint as short as the second. Pronotum somewhat narrower than elytra, slightly narrowing posteriorly, longer than broad, with fine, yet distinct side-ridge, which not until behind the fore-corner runs in on the ventral side; pronotal punctate rows with few, most

often 4-6, rather large punctures, the anteriorly outcurved side-rows with 8-9 punctures; pronotal surface elsewhere with extremely fine, and very scattered, often indistinct punctation, polished; elytra a little longer than pronotum, with rather scattered and robust, at sides rowed punctation; the abdomen with fine and scattered punctation, sparsely haired. L. 7-8 mm.

Distributed in Europe, N. Asia and N. America; in this country everywhere common, in forests and gardens, under leaves, in compost, at rotting plant-matter and at manure. The larva is found and reared by Hr. O. Holstebroë 19. 10. 1888. It is found in compost etc. together with the beetle.

(Page 434)

4. X. angustatus Steph.

(Steph. Ill. Brit. V, 263; Janglb. Käf. N. II, 480.- ochraceus Fyllh. Ins. Suec. II, 352; Kraatz Ins. D. II, 636; Thoms. Skand. Col. II, 189; Muls. et Rey Brévip. 1877, 73).

Closely allied to punctulatus, but ordinarily somewhat smaller, especially narrower, also most often of lighter color, with less glistening pronotum, and with more punctures in the pronotal punctate rows.

Black, pitch-black or pitch-brown; the head and especially the pronotum feebly glistening; elytra pitch-brown, reddish-brown or yellowish-brown, abdominal tip brownish; antennae, mouth-parts, and legs brownish-red.

The head is oblong, as broad as pronotum, with small eyes, at middle with fine and scattered, on sides more robust and rather dense punctation, the surface very finely reticulate, for the rest like in

the preceding species; antennae shorter and more robust than in same. Pronotum is oblong, anteriorly about as broad as elytra, feebly narrowing posteriorly, the surface especially finely transversally adiculated and therefore with tempered shine, with 8-10 punctures in the dorsal rows, and as many or more in the anteriorly curved side-rows; elytra as long as pronotum, rather fine, not dense, at sides row-formed punctation, elytra and the very finely and scatteredly punctated abdomen sparsely haired. L. 6-7 mm.

Distributed in Europe, and common here in this country, under leaves and at rotting plant-matter; not infrequently found with ants, especially Lasius fuliginosus and Formica rufa, as well inside as about the mound.

5. X. atratus Heer.

(Heer Faun. Helv. I, 246; Kraatz Ins. D. II, 636; Muls. et Rey Brévip. 1877, 80; Ganglb. Käf. N. II, 480. - picipes Thoms. Skand. II, 190).

In size, form and color much like angustatus, but with polished pronotum and more glistening head, also fewer punctures in the pronotal punctate rows, furthermore mainly separated from angustatus also from punctulatus, in that those on ventral side of head at the mouth-corners issuing lines are not, like in these, confluent at middle, but narrowly separated running side by side down to the neck.

Black or pitch-black, glistening, pronotum polished; elytra brown or reddish-brown; abdominal tip, often also posterior margins of abdominal joints, antennae, mouth-parts, and legs yellowish-brown or reddish-

brown; antennal first joint most often black.

The head on sides is a little more rounded than in angustatus, the middle as well as the sides less densely punctated, the surface not reticulate, therefore more glistening; pronotum on surface not aciculated, but polished, with very scattered and extremely fine punctation, same as in punctulatus, and like this with only 4-6 punctures in the dorsal punctate rows, and 8-10 in side-rows. Punctation of elytra and abdomen like that in angustatus. L. 6-7 mm.

In the mounds with Formica rufa and Lasius fuliginosus; distributed in North and Middle Europe, but rare and local; heretofore it is here mostly found in North Sjaelland (Fudehegn, Tokkekøb Hegn, Hillerød, Tisvilde Hegn), however also in Rold Forest, Jutland. The ants chase it as a rove-guest (Wasmann).

4. Subgenus Xantholinus s. str.

6. X. glabratus Gravh.

(Gravh. Micr. 178; Erichs. Käf. Mk. Br. I, 424; Jen. Spec. Staph. 319; Kraatz Ins. D. II, 633; Thoms. Skand. Col. IX, 177; Muls. et Rey Brévip. 1877, 46; Ganglb. Käf. M. II, 481).

Our largest species; easily identified by the size, and by the vivid coloring of elytra.

Deeply black, polished glistening; elytra vivid red; antennae, mouth-parts, and legs pitch-brown, tarsi reddish.

The head is large, oblong, fully as broad as pronotum, broadened posteriorly and with slightly rounded-off temple-corners, at middle

polished, on sides scatteredly and coarsely punctated, furthermore the surface-ground scatteredly minutely punctuate; antennae robust, their third joint only a little longer than the second; pronotum oblong, narrower than elytra, narrowing posteriorly, the surface with especially fine, scattered minute punctuation, with 5-6 coarse punctures in the dorsal punctate rows, and with at least as many in the anteriorly outcurved side-rows; elytra as long as pronotum, with scattered and rather fine, on the sides rowed punctation; abdomen with very fine, and especially along the middle, very scattered punctation.

L. 12-14 mm.

Distributed in Europe; in this country often in masses in compost, and at hothouse benches in larger gardens and in parks (Copenhagen, Sorø, Søborg; Odense; Sønderborg, Haderslev, Taps, Kolding, Aalborg and other places).

7. X. glaber Nordm.

(Nordm. Symb. 114; Erichs. Käf. Mk. Br. I, 425; Gen. Spec. Staph. 325; Kraatz Ins. D. II, 640; Thoms. Skand. Col. II, 192; Muls. et Fey Brévip. 1877, 51; Ganglb. Käf. M. II, 482).

Black, remarkable polished shine; elytra light brownish-red, rarely pitch-brown with lighter humeri and posterior margins; antennae, mouth-parts and legs reddish-brown.

Head a little narrower than pronotum with strongly rounded-off temple-corners, on sides with simple and rather fine punctation; antennae short and robust; pronotum a little narrower than elytra, oblong, posteriorly feebly narrowed, with 8-10 punctures in dorsal punctate rows and 6-8 in the anteriorly curved side-rows, elsewhere as

well as the head highly polished; elytra somewhat longer than pronotum, with three rather regular punctate rows and between these finely and sparsely punctate; abdomen with fine and scattered, at middle sparse punctation, L. 7 mm. -----(Page 436) -----

Heretofore not found in Denmark, but as it is distributed in Middle Europe, and also taken at ~~Ringsbøen~~ in Skaane (Thoms.), it is not improbable that it may be found here also. It lives in old, hollow trees, which are occupied by Vespa crabro, but it also occurs with ants, both Formica rufa and Lasius fuliginosus (Ganglb.).

8. X. tricolor Fabr.

(Fabr. Mant. I, 221; Erichs. Käf. Mk. Br. I, 427; Jen. Spec. Staph. 331; Kraatz Ins. D. II, 638; Thoms. Skand. Col. II, 191; Muls. et Rey Brévip. 1877, 56; Ganglb. Käf. M. II, 483).

Broader and larger than the two following species, and especially identifiable by the color of pronotum, but otherwise rather variable in color.

Lighter or darker reddish-brown, glistening, sparsely haired, the head black or brownish-black, pronotum anteriorly yellowish-red or brownish-red, posteriorly darkly brownish, more rarely entirely yellowish-red; elytra yellowish-red; abdomen pith-black or pitch-brown with lighter tip; antennae and mouth-parts brownish-red; legs reddish-yellow.

The head is a little broader than pronotum, oval, with convex sides and broadly rounded-off temple-corners, at middle simple or sparsely, on sides scatteredly and rather finely punctate, the surface smooth or indistinctly transversely aciculated; antennae robust, their third

joint a little longer than the second; pronotum oblong, anteriorly as broad as elytra, narrowing posteriorly, at middle polished, with 10-14 punctures in dorsal rows, punctures on sides irregularly scattered; elytra distinctly shorter than pronotum, rather coarsely and not densely punctated; abdomen with fine and scattered punctation. L. 10-12 mm.

Distributed in Europe, and not rare in this country under leaves on high forest ground, more often taken at the mounds of Formica rufa and Lasius fuliginosus. The larva is found in Dyrehaven by Cand. Jensen 19. 10, 88, and reared.

9. X. laevigatus Jac.

(Jacobsen Skand. Naturf. 5. M. 1849, 678. - distans Kraatz Ins. D. II, 639; Ganglb. Kaf. M. II, 484. - tricolor var. distans Muls. et Fey Brevip. 1877, 71).

Closely allied both to the preceding and following species. From tricolor, of which it occasionally is treated as a variety, and with which it corresponds in that the form of the head, although less distinctly, is oviform and broadest posteriorly, it is easily separated by the following deviations:

It is smaller and narrower and the color is most often darker; pronotum is ordinarily unicolorous pitch-brown with feeble metal reflection, or the posterior part is lighter than the anterior; punctation of head, pronotum and elytra is comparatively finer.

From light colored linearis, which it can be like in color, and rather corresponds with in form and size, it differs mainly in that,

the head is distinctly oviform, that the surface of pronotum is entirely smooth, not transversally aciculated, and that its sides are with less smoothly scattered punctation, but the punctures often partly arranged in an anteriorly curved, more or less confused or broken row. L. 7-10 mm.

In the ♂ the posterior margin of the abdominal sixth free dorsal joint truncate with long hairs in margin, and at middle with a more or less distinct, obtuse-angular incision. In tricolor and linearis the posterior margin is more straight than in the ♀, but without incision or longer marginal hairs.

Distributed in Middle Europe, and in this country more frequent than the preceding species; under leaves in woods, and often in company with ants, especially Lasius fuliginosus and formica rufa.

10. X. linearis Oliv.

(Oliv. Ent. III, 42; Erichs. Käf. Nk. Br. I, 420; Gen. Spec. Staph. 332; Kraatz Ins. D. II, 641; Muls. et Rey Erévip. 1877, 70; Ganglb. Käf. M. II, 484. - multipunctatus Thoms. Scand. Col. II, 191).

A narrow, elongate and uniformly broad species, which in relation to the preceding species is identified especially by the more oblong form of the head, pronotal punctation and (suitably magnified) as a rule distinct transversal aciculation.

Black or pitch-black, glistening, finely and sparsely haired; the thorax in the imago with feeble metal reflexion; elytra pitch-black or pitch-brown, occasionally yellowish-brown; antennae, mouth-parts, and legs brownish or yellowish red.

The head (Fig. 124) is as broad as pronotum, oblong, scarcely broadened posteriorly, at middle smooth, the sides with fine and rather scattered punctation, the surface very finely transversally aciculate; antennae robust, after the long first joint distinctly geniculated, their second and third joints of equal length; pronotum anteriorly as broad as elytra, narrowing posteriorly, oblong, the surface very finely, yet distinctly transversally aciculate and with 12-16 punctures in dorsal rows, the sides with rather fine, and somewhat unevenly scattered punctation; elytra as long as, or sometimes a little shorter than pronotum, rather robustly and densely punctate. L. 7-9 mm.

Fig. 124. Xantholinus linearis Oliv.

Distributed everywhere in Europe and North Asia, and common in this country, as well on dry as damp ground, not infrequently in company with ants, especially Formica rufa and lasius fuliginosus.

X. longiventris Heer (Kraatz Ins. D. II, 641; Thoms. Skand. Col. II, 191; Muls. et Rey Brévip. 1877, 67) is seemingly only a somewhat deviating form of linearis. It has longer elytra and fewer (10-12),
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larger punctures in pronotal rows; head and pronotum with smooth surface or indistinctly transversally aciculate. - None of these characters are however settled or unchangeable and therefore not sufficiently strong to separate the species.

Pare or local (Copenhagen, North-Falster, Odense vicinity, Aalborg).

77. Genus Leptacinus Erichs.

(Erichs. Käf. Mk. Br. I, 429; Kraatz Ins. D. II, 645; Thoms. Skand.

Col. II, 192; Muls. et Rey Brévip. 1877, 99; Ganglb. Käf. M. II, 486).

The species of this genus are in appearance like small, narrow Xantholinus-species, and are separated from these mainly only by that the last joint of maxillary palpi is very small and spiculiform, much narrower than the next-last; forehead anteriorly with four distinct grooves, inasmuch as the two outer ones are as deep as the middle ones, they are less obliquely directed in toward the margin of the eye than is the case with Xantholinus.

In North and Middle Europe 4 species are distributed, which also are found in Denmark.

Key to Species.

1. The two dorsal punctate rows of pronotum each with 5 rather large punctures. 1. 6-7 mm. 1. L. parumpunctatus Gyllh.
- Dorsal punctate rows of pronotum each with 8-16 rather fine punctures..... 2.
2. Dorsal punctate rows of pronotum each with 12-16 punctures. Elytra posteriorly most often brownish yellow. L. 4-5 mm.....
..... 2. L. batychrus Gyllh.
- Dorsal rows of pronotum each with 8-10 punctures..... 3.
3. Head and pronotum on surface transversally aciculate. Elytra black.
L. 4 mm..... 3. L. linearis Gravh.
- Head and pronotum with smooth surface. Elytra brown, posteriorly brownish-yellow. The species myrmecophil. L. 3-4 mm.....
..... 4. L. formicetorum Mark.

1. L. parumpunctatus Gyllh.

(Gyllh. Ins. Suec. IV, 481; Erichs. Gen. Spec. Staph. 335; Kraatz Ins. D. II, 648; Thoms. Skand. Col. II, 193; Muls. et Pey Brevip. 1877, 102; Ganglb. Kaf. M. II, 487).

Larger than the following species of the genus, and with fewer punctures in the pronotal dorsal rows; in appearance much like Xantholinus ochraceus.

Black, strongly glistening; elytra and the abdomen very sparsely and finely haired; elytra, especially posteriorly, brownish, their epipleura nearest to the hind corners whitish-yellow; antennae, mouth-parts, and legs brownish-red.

The head is oblong, posteriorly fully as broad as pronotum, anteriorly distinctly narrowing, at middle smooth, on sides and behind eyes with robust, but not dense punctation, anteriorly with four deep grooves on forehead; antennae rather robust, their third joint a little shorter and smaller than the second, the middle ones feebly, the next-last strongly transverse. Pronotum longer than anteriorly broad, posteriorly narrowing, with 5 robust punctures in dorsal rows, and 5 equally robust in the anteriorly curved side-rows, the ground-surface of head and pronotum smooth; elytra as long as pronotum with three rather fine,

somewhat irregular longitudinal punctate rows, and between these with scattered punctation; abdomen with with fine and scattered punctation. L. 6-7 mm.

Rare or very rare in this country, in woods and gardens under leaves.

at hothouse boxes and in compost, also at fungi. (Copenhagen, Hillerød; Randers, Aalborg and several other places). Widely distributed in Europe and Asia, also known from Abyssinia, Cuba, New Caledonia, Australia, et. al. (Ganglb.).

2. L. batychnus Gyllh.

(Gyllh. Ins. Suec. IV, 480; Erichs. Käf. Mk. Br. I, 429; Gen. Spec. Staph. 335; Kraatz Ins. D. II, 649; Thoms. Skand. Col. II, 193; Muls. et Rey Brévip. 1877, 105; Ganglb. Käf. M. II, 487. - apicalis Steph. Ill. Brit. V, 260).

Considerably smaller than the preceding species, and in relation to this especially identifiable by the numerous punctures in the pronotal rows.

Pitch-black or black, glistening; elytra brownish, toward the posterior margin oftenest brownish-yellow, elytra and abdomen very sparsely and finely haired; antennae, mouth-parts, and legs brownish-red.

Head oblong, posteriorly fully as broad as pronotum, anteriorly feebly narrowing, the sides rather densely and finely punctate, the surface feebly transversally aciculated; pronotum oblong, anteriorly about as broad as elytra, posteriorly distinctly narrowing, the dorsum with 12-16 rather fine punctures in each dorsal row, and a similar number in the anteriorly curved side-rows, the surface extremely feebly transversally aciculated, almost smooth; elytra as long as pronotum, with three fine punctate rows, intervals and at tip with scattered and fine punctation; abdomen with fine and scattered punctation. L. 4-5 mm.

Rather rare, but distributed; in woods and gardens at rotting plant-matter. Europe, Asia, North America and Australia.

3. L. linearis Gravh.

(Gravh. Micr. 43; Kraatz Ins. D. II, 649; Thoms. Skand. Col. II, 193; Muls. et Rey Brévip. 1877, 110. - sulcifrons Steph. Ill. Brit. V, 260. - batychnus var. linearis Ganglb. Käf. M. II, 487).

Much like batychnus, of which it is occasionally treated as a variety. It differs from batychnus by the following characteristics:

It is ordinarily somewhat smaller and narrower, also of darker color; elytra most often entirely black, rarely brownish at tip; the head a little less, and the sides less densely punctate, and in each of the pronotal dorsal rows fewer punctures are counted, only about 8-10; the surface of head and pronotum somewhat more distinctly transversally aciculated. L. 4. mm.

Like the preceding species in woods and gardens at rotting plants, in compost and at hothouse boxes, and not rare in this country, also found in alluvium. Distributed in most of the continents like the preceding species.

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4. L. formicetorum Mark.

(Mark. Germ. Ztschr. III, 216; Kraatz Ins. D. II, 650; Thoms. Skand. Col. II, 193; Muls. et Pey Brévip. 1877, 113; Ganglb. Käf. M. II, 488).

Very fine and narrow, considerably smaller, especially narrower than linearis, and of lighter color than this, with which it in regard to the number of punctures in pronotal rows, and punctuation of elytra etc. almost entirely corresponds.

Black or pitch-black, strongly glistening; elytra brownish, posteriorly brownish-yellow, these and abdomen very sparsely and finely haired; tip of abdomen often brownish; antennae, mouth-parts, and legs yellowish-red.

The head is fully as broad as pronotum, feebly narrowing anteriorly, the sides with fine and scattered punctation; antennal third joint very short, rounded; pronotum oblong, slightly narrowing posteriorly with 8-10 punctures in each of dorsal and side rows, pronotum and head with ground-surface smooth or very indistinctly transversally aciculated; elytra as long as pronotum, elytra and abdomen punctated about as in the preceding species. L. 3-4 mm.

It lives in the mounds with Formica rufa and pratensis, and is with these ants distributed everywhere in this country, and not rare. The ants seems to ignore or tolerate it. When a mound is abandoned by the ants, it, together with many other ant-guests moves along, or seeks out some other mound. Outside of ant mounds it is not found. North and Middle Europe, Spain, Cyprus.

4. Group Paederini.

(Erichs. Käf. Mk. Brand. I, 1837, 499; Gen. Spec. Staph. 560; Kraatz Ins. Deutschl. II, 662; Ganglb. Käf. Mitteleur. II, 494. - Paederina Thoms. Skand. Col. II, 194. - Pederiens Muls. et Rey Brévip. 1878, 1.

The prosternal spiracula are ordinarily not visible, being covered by the pronotal inflexed, and posteriorly dilated (with pro-humeri connate) side-margins, only exceptionally uncovered (Cryptobium, Litocharis). Behind the fore-coxae the sternum at middle is either membranous or chitinous (Astenus). The antennae are 11-jointed, inserted beneath the angle- or axe-formed, protruding anterior corners of the forehead, above base of the mandibles, before the eyes.

The body is narrowly elongate, and most often rather round, rarely somewhat flat (Achenium); the head porrect, posteriorly strongly, often very strongly neck-formedly constricted, and the neck thereby often especially narrow; the eyes small, antennae moliniform or filiform, rarely geniculate (Cryptobium); mandibles prominent, provided with one, or several teeth. The last joint of maxillary palpi is remarkably small, subuliform or acicular, sometimes "wart-formed" tuberculiform - (Paederus) or scarcely visible (Stilicus).

Pronotum is differently formed; scutellum visible; elytra almost of same length as the sternum; abdomen most often elongate, its sides with margins (or ridges); the next-last (ninth=seventh free) dorsal joint is either divided into two, more or less narrow side-pieces or squarely



incised, deepest in the ♀. Fore-coxae are prominent and conical, the middle ones narrowly separated, the hindmost shortly conical; anterior femora sometimes strongly thickened, and on inner side tooth-formedly dilated (Lathrobium, Achenium), tibiae most often without spines, tarsi 5-jointed; fore-tarsi not infrequently dilated, especially in the ♂. The sex-characters of the ♂, which ordinarily are found more or less developed in the abdominal fifth and sixth ventral joints, affords in many instances important features for the exact determination of species.

The few larvae, which heretofore are known with certainty, (of genera Lathrobium, Paederus, Stilicus) adhere mainly to the larvae of group Staphylinini (Ganglb.).

Heretofore about 40 Paederini species are found in this country. The group is sometimes divided (Muls. et Rey, Seidlitz) according to characters of tarsi and neck into several, us concerning, into three divisions.

Key to (Divisions and) Genera.

1. Hind-tarsal fourth joint simple and undivided..... 2.
- Hind-tarsal fourth joint divided into two, in Astenus membranous, lobes, between which the claw-joint is fastened (Paederina Muls. et Rey, Seidlitz)..... 8.
2. The neck almost $\frac{1}{4}$ as broad as head, pronotum anteriorly not tapering (Lathrobiina Muls. et Rey, Seidlitz)..... 3.
- The neck very thin, only $\frac{1}{8}$ as broad as head, "knob-formed"; pronotum anteriorly tapering forwardly (Scopaeina Muls. et Rey,

- Seidlitz).....7.
3. Antennae straight, not geniculate..... 4.
- Antennae after the long, scape-formed first joint, geniculate....
.....,78. Cryptobium Mannh.
4. Hind-tarsal first joint short, as long as, or a little shorter than
the second. Fore-femora and fore-tibiae remarkably thick, fore-
femora on ventral margin obtusely or tooth-formedly dilated.
Fore-tarsi in both sexes strongly dilated..... 5.
- Hind-tarsal first joint somewhat elongate, noticeably longer than
the second. Fore-femora only feebly, fore-tibiae scarcely thick-
ened. Fore-tarsi only in the ♂ sometimes feebly dilated..... 6.
5. Pronotal fore-corners prominent. Hind-tarsal claw-joint long. Body
flat..... 79. Achenium Curt.
- Pronotal fore-corners deflected and rounded off. Hind-tarsal claw-
joint rather short. Body rather round or convex.....
..... 80. Lathrobium Gravh.
6. Eyes rather small, shorter than temples..... 81. Medon Steph.
- Eyes larger, as long as temples..... 82. Lithocharis Lac.
7. Hind tibiae at tip obliquely truncated. Head scarcely broader than
pronotum. Body very narrow and rather small...83. Scopaeus Er.
- Hind tibiae at tip almost rectangularly truncated. Head much
broader than pronotum..... 83. Stiliculus Latr.
8. Pronotum polished, sparsely punctated. Species rather large....
.....85. Paederus Fabr.

- Pronotum dull, densely punctate. Species smaller, narrow and elongate..... 86. Astenus Steph.

(Lathrobiina Muls. et Rey, Seidlitz).

78. Genus Cryptobium Mannh.

(Mannh. Brach. 38; Erichs. Käf. Mk. Br. I, 500; Gen. Spec. Staph. 561; Kraatz Ins. D. II, 694; Thoms Skand Col. II, 201; Muls. et Rey Brévip. 1878, 4; Ganglb. Käf. M. II, 495).

Within the group this genus is distinguished, and easily identified by the antennae, which, after the long, scape-formed first joint are strongly geniculate (Fig. 125). Other characteristics are:

Labrum at middle with an acute incision, of which the corners are acutely tooth-shaped; mandibles are long, sickle-shaped, two-three toothed; maxillary palpal fourth joint very small and acicular, almost hidden in the end of the third, which is club-formed, and proportionately large. Legs are slender, tarsi simple, first joint of hind tarsi elongate and as long as the claw-joint, the fourth undivided.

Only 1 species lives in Europe, which also is found in this country, and occurs on damp ground.

Fig.125. Cryptobium fracticorne Payk.

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1. C. fracticorne Payk.

(Payk. Faun. Suec. III, 430; Erichs. Käf. Mk. Br. I, 500; Gen. Spec. Staph. 575; Kraatz Ins D. II, 202; Muls et Rey Brévip. 1878, 6; Ganglb. Käf. M. II, 495).

A slender, rather uniformly broad species, of which the main characters coincide with those of the genus.

Black, glistening, with very fine, and on head and pronotum especially sparse, black hair; antennae brownish, most often lighter toward the tip; the legs reddish or brownish yellow.

The head (Fig. 125) is rather large, oblong, with scattered, and particularly to the fore, rather coarse punctation, with small eyes, and in front of these with a short groove, which partly serves as receptical for the antennal scape-formed first, feebly club-shaped joint, which is as long as the four following joints together; the antennal next-last joints as long as broad. Pronotum is a little narrower than elytra, but a little broader than the head, longer than broad, with feebly rounded sides, the dorsum with two punctate rows, consisting of numerous rather fine punctures, the rows separated by a rather narrow, polished and smooth interval, the sides with irregularly scattered punctation. Elytra are, in winged specimens, as long as pronotum, in the wingless somewhat shorter than pronotum, with rather robust, dense punctation; abdomen with extremely fine and dense punctation, and due to this, with modulated shine. L. 5-6 mm.

In the ♂ the abdominal sixth ventral joint deeply and acutely incised, the fifth posteriorly at middle slightly impressed.

On meadow- and damp woodland ground, in alluvium at water-edges; distributed everywhere in Europe, not rare in this country, but mostly found singly.

79. Genus Achenium Curt.

(Curtis Brit. Ent. III, 1826 T. 115; Erichs. Käf. Mk. Br. I, 501; Gen. Spec. Staph. 581; Kraatz Ins. D. II, 689; Muls. et Rey Brévip. 1878, 14; Ganglb. Käf. M. II, 497).

The body flat; head anteriorly narrowing, almost triangular; antennae slender and rather fine; pronotum posteriorly narrowing, its fore-corners projecting and rather sharp; anterior femora, like those in following genus, the ventral margin obtusely tooth-formedly dilated (cf. Fig.126); fore-tibiae strongly broadened toward tip, at middle with a convex process opposed to the tooth of the femora; fore-tarsi in both sexes strongly dilated; posterior femora often thickened, hind tarsi proportionately thin, their claw-joint long, as long as the four preceding joints together. The foremost abdominal ventral joints without carina in middle-line. - For the rest this genus is very closely allied to the following.

A number of species belonging to this genus are distributed in the countries bordering the Mediterranean sea, a few in Middle Europe; of these 1, perhaps 2, in Denmark. They live on damp ground under moss and stones, and at the root of plants.

Key to Species.

1. Elytra as long as pronotum, brownish-yellow, at base - or further distributed - often darker. L. 7 mm..... 1. A. humile Nicol.
 - Elytra distinctly longer than pronotum, red, at base broadly, sometimes till above middle black. L. 8 mm... 2. A. depressum Gravh.
1. A. humile Nicol.

(Nicol. Col. Hal. 1822, 38; Erichs. Käf. Mk. Br. I, 501; Gen. Spec. Staph. 586; Kraatz Ins. D. II, 690; Muls. et Rey Brévip. 1878, 21; Ganglb. Käf. M. II, 498).

In appearance very much like a medium sized Lathrobium; particularly distinguishable by the flat form of the body, and by the color of elytra.

Brown or pitch-brown, glistening; pronotum with very sparse, abdomen with somewhat denser, very fine hair; head and pronotum often brownish-black, occasionally reddish-brown; elytra brownish-yellow, at base narrowly, or more widely dark; abdominal tip reddish-brown; antennae, mouth-parts, and legs yellowish-red.

The head posteriorly as broad as pronotum, from the middle forwardly strongly narrowing, with rather pronounced hind-corners, and with small eyes, on sides with sparse and rather robust, at middle with simple punctation; antennae long and slender, all joints at least twice as long as broad; pronotum anteriorly as broad as elytra with almost straight fore-margin, and prominent, rather sharp fore-corners, posteriorly narrowing and with rounded off hind corners, at middle smooth, the middle-line occasionally finely grooved, on each side of the smooth middle with a partly double-rowed, of many fine punctures consisting punctate row, posteriorly at side of this row with a short smooth plane, otherwheres on sides finely and not densely punctate; elytra scarcely longer than pronotum, with scattered and rather fine, here and there row-formed punctation; abdomen with fine and rather dense punctation, its sides slightly rounded. L. 7 mm.

In the ♂ the abdominal sixth ventral joint at tip broadly, obtusely angularly emarginate.

Distributed in Middle Europe, very rare in this country. On marshy

ground west of Ribe (Outer Bjerrum 27. 5. 1857 Dr. F. Meinert), on the beach under seaweeds at Esbjerg (5. 1897 Jensen-Haarup and Konsv. Løven-dal); Engtofte, Lolland (20. 6. 1876 W. Schlick).

2. A. depressum Gravh.

(Gravh. Micr. 182; Muls. et Rey Brévip. 1878, 17; Ganglb. Käf. M. II, 498).

Much like the preceding species, but as a rule somewhat larger and mainly deviating from this in color.

Black, head and pronotum especially strongly glistening; elytra red, at base narrowly, or till above middle extending black, rarely with only the hind corners red (var. ephippium Er.) or entirely red (var. rubripenne Reitt.); the apex of the abdominal tip brownish; antennae and mouth-parts rust-red; legs yellowish red, sometimes darker.

Pronotal punctate rows very fine, more irregularly double than in humile, and are posteriorly often placed in feebly suggested longitudinal impressions; elytra are most often distinctly a little longer than pronotum, with a little sparser, and oftenest more distinctly row-formed punctation than in the preceding species; sex characters on the abdominal fifth and sixth ventral joint are in the ♂ formed like those of the preceding species. L. 8 mm.

A single specimen from Falster (12. 8. 1902 Esb. Petersen) in my collection with extensively black elytra apparently belong to this species, known from South and Middle Europe.

80. Genus Lathrobium Gravh.

(Gravh. Micr. 1806, 130; Erichs. Gen. Spec. Staph. 588; Kraatz Ins. D. II, 670; Thoms. Skand. Col. II, 197; Muls et Rey Brévip. 1878, 26; Ganglb. Käf. M. II, 501).

The body is elongate, more or less cylindric; the head porrect, oblong or rounded, most often as broad as pronotum, with narrow or rather narrow neck, and with small eyes; labrum most often deeply cleft; mandibles on inner margin toothed; last joint of maxillary palpi very small, spiculiform; antennae straight, filiform, their first joint longest.

Pronotum most often oblong with parallel sides and with deflected, slightly rounded-off fore-corners, at the middle line smooth, elsewhere punctated; elytra as a rule longer than pronotum, but in several species, of which both winged and wingless forms occur, they are in the wingless forms most often shorter than pronotum. Abdomen is of equal breadth, only tapering posteriorly, its first ventral joint at middle finely carinated, the fifth and sixth often provided with sex-characters, which serve as important identification marks of species. The legs are rather short; front-femora strongly thickened (Fig. 126), on ventral margin obtusely tooth-formedly dilated; tibiae not spiniferous, the foremost coarsely, on inner side groove-formedly produced, the hindmost at tip obliquely truncated, and here the margin is densely haired; fore-tarsi in both sexes strongly dilated, first joint of hind tarsi short, a little shorter than the second, their claw-joint rather short, hardly as long as the other joints together.

About twenty species are found distributed in Middle and North Europe;

of which 13-14 also make their home with us. They live on damp ground, as well in as outside of forests, often at water edges in alluvium, under leaves and stones.

Key to Subgenera and Species.

1. Elytra with single side-marginal ridge..... 2.
- Elytra with double side-marginal ridge, rowed punctation: 1. Subg.
Lobrathium Muls. - Pronotum with even, rather dense and coarse
punctation, with smooth middle-line. L. 7-8 mm.....
..... 1. multipunctum Gravh.

2. Neck of the head very narrow, hardly 1/3 as broad as the head, which
is rounded and narrower than pronotum: 2. Subg. Tetartopeus Czwal..3.
- Neck of the head broader, about half as broad as head, which is more
or less oblong, and only exceptionally narrower than pronotum:
.....3. Subg. Lathrobium s. str.... 4.
3. Elytra rather dull, oftenest entirely black. Legs pitch-black or
brownish-red. L. 7-8 mm.....2. L. quadratum Payk.
- Elytra glistening, black, most often with reddish-yellow outer hind
corners. Legs reddish or brownish yellow. L. 6-7 mm.....
..... 3. L. terminatum Gravh.
4. Body black with either entirely black or partly red or brownish
elytra..... 5.
- Body with reddish or brownish-yellow elytra, occasionally with
darker abdomen 12.

5. Elytra red or brownish-red and at base at larger or smaller extension black, or black with brownish suture and posterior margin: 6.
- Elytra entirely black..... 9.
6. Head all over with dense, even and coarse punctation. L. 6-7 mm.....
- 4. L. rufipenne Gyllh.
- Head on sides with rather fine and dense, at middle more sparse punctation.....7.
7. Abdominal sixth ventral joint in the ♂ with a longitudinal groove in middle line, which on the sides are bordered with closely set black hair, and terminates in a more or less distinct incision (Fig. 139 and 130)..... 8.
- Abdominal sixth ventral joint in the ♂ not, or only with a feeble longitudinal groove, and without arranged rows of hair, at tip with obtuse angular incision. L. 8-9 mm....5. L. fulvipenne Gravh.
8. Abdominal sixth ventral joint in the ♂ in tip between hair-rows with acute angular incision. Elytra distinctly longer and broader than pronotum. L. 8-9 mm..... 6. L. elongatum Linn.
- Abdominal sixth ventral joint in the ♂ in tip between hair-rows only feebly incurved. Elytra scarcely longer than pronotum. L. 8-9 mm.
- 7. L. geminum Kr.
9. The head noticeably a little narrower than pronotum..... 10.
- The head at least as broad as pronotum..... 11.
10. Legs ordinarily of a clear yellowish-red. Species large. L. 8-10 mm.
- 8. L. brunnipes Fabr.

- Legs reddish or yellowish brown. Species smaller. L. 6-7 mm.....
..... 9. L. fovulum Steph.
- 11. Legs blackish-brown with lighter knees and tarsi. L. 6 mm.
..... 10. L. filiforme Gravh.
- Legs reddish-yellow. Species small, very narrow. L. 4-5 mm.
..... 11. L. longulum Gravh.
- 12. Abdomen rather glistening, densely and very finely punctate. Species
very narrow. L. 4.5-5 mm.....12. L. dilutum Er.
- Abdomen dull, extremely densely and finely punctate, darker than the
thorax. Species broader. L. 5-6 mm.....13. L. pallidum Nordm.

1. Subgenus Lobrathium Muls. et Rey.

1. L. multipunctum Gravh.

(Gravh. Micr. 52; Erichs. Käf. Mk. Br. I, 506; Gen. Spec. Staph. 591; Kraatz Ins. D. II, 676; Thoms. Skand. Col. II, 200. Muls et Rey Brévip. 1878, 82; Ganglb. Käf. M. II, 506).

Distinguished, and easily identified by the elytral rowed punctation and double side-marginal borders (or ridges).

Black, pitch-brown or reddish-brown, glistening; elytra very sparsely, abdomen more densely haired; elytra brownish-red, often darker at base; abdominal tip reddish-brown or yellowish-brown; antennae and mouth-parts rust-red, legs yellowish-red.

Body slender and cylindrical; head a little broader than pronotum, rounded-square, with coarse and dense, at middle rather sparse punctation;

antennae slender; pronotum oblong with parallel sides, a little narrower

than elytra, rather coarsely and densely punctate with smooth middle-line; elytra most often as long as pronotum, sometimes a little longer than same, with coarse and dense rowed punctation, and on the deflected side-margin with two, very fine parallel side ridges; abdomen with fine and rather dense punctation. L. 7-8 mm.

In the ♂ the abdominal sixth ventral joint at tip deeply and narrowly incised, and above the incision grooved; the fifth joint at middle with two small bosses placed close together and is behind these broadly impressed.

Local and as a whole rare. It is found preferably on or near the beach, under stones, at roots of plants, on damp slopes, at the outflow of streams etc. (Gilleleje, Hulerød, Tisvilde and several other places in Sjaelland; Pomlenakke Strand in Falster; Bornholm; Fyen; Strand at Aarhus). Where it is found the larvae is presumably also to be discovered. Distributed in the main part of Europe, in Algiers and Madeira.

2. Subgenus Tetartopeus Czwal.

2. L. quadratum Payk.

(Payk. Mon. Staph. 29; Erichs. Käf. Mk. Br. I, 507; Gen. Spec. Staph. 595; Kraatz Ins. D. II, 678; Thoms. Skand. Col. II, 200; Muls. et Rey Brévip. 1878, 68; Ganglb. Käf. M. II, 508).

Broadest across the elytra, to the fore and the back narrowing, identified especially by the rounded shape of the head and very narrow neck, also by the ordinarily unicolorous black elytra.

Black; head and pronotum glistening; elytra with dull shine, together with the dull abdomen finely haired; antennae, mouth-parts, and legs pitch-

brown or brownish-red. Elytra rarely with a yellow spot on the outer hind corners.

*)
Head narrower than pronotum, rounded, with a narrow, almost "knob-formed" neck, which hardly is a $1/3$ as broad as the head, on sides with rather fine and dense, at middle more sparse punctation; antennae long and slender, and feebly thinned outwardly, all their joints longer than broad; pronotum much narrower than elytra, a little longer than broad, with almost parallel sides and rounded off corners, with rather robust and dense punctation, and with smooth middle-line; elytra distinctly longer than pronotum, finely and rather densely punctate; abdomen with extremely fine and dense punctation. L. 7-8 mm.

In the ♀ the abdominal sixth free dorsal joint is elongated ending in a fine point; in the ♂ the sixth ventral joint with a narrow angular incision, and the two preceding joints at middle flatly grooved.

Distributed in Europe and not rare in this country, on damp ground, sometimes quite numerous in alluvium and under stones at water edges. Most likely the larvae can be found at the same places as the beetle.

3. L. terminatum Gravh.

(Gravh. Micr. 55: Kraatz Ins. D. II, 679; Thoms. Skand. Col. II, 200; Muls et Rey Brévip. 1878, 71; Ganglb. Käf. M. II, 509. - quadratum var. b. Erichs. Käf. Mk. Br. I, 507; Gen. Spec. Staph. 595).

Smaller and narrower than quadratum, to which it is very closely allied, and of which it sometimes is treated as a variety, but however, besides by the difference in size, it can ordinarily be separated in that.

the elytra are glistening, their outer hind corners, the antennal first joint and tip, also the legs are most often reddish or brownish yellow, that the head is a little narrower and longer, elytra robustlier punctate, and that the abdominal sixth free dorsal joint in the ♀ is elongated into a broader, more tongue-formed tip. L. 6-7 mm.

As widely distributed as, and not rarer than the preceding species; on damp ground, in alluvium, under leaves etc.

3. Subgenus Lathrobium s. str.

4. L. rufipenne Gyllh.

(Gyllh. Ins. Suec. III, 704; Erichs. Käf. Mk. Br. I, 505; Gen. Spec. Staph. 591; Kraatz Ins. D. II, 675; Thoms. Skand. Col. II, 190; Muls. et Rey Brévip. 1878, 48; Ganglb. Käf. M. II, 510).

Smaller and more slender than elongatum, geminum, and fulvipenne, and in relation to these, furthermore recognizeable by the coarser, more smoothly dense punctation of the head.

Black, glistening; thorax sparsely, abdomen somewhat denser haired; elytra red, their anterior third part black; antennae, mouth-parts, and legs yellowish-red.

The head as broad as pronotum, feebly oviform, the entire dorsal side as well as the ventral side with dense, even and coarse punctation; the antennae rather robust, their distal joints about as broad as long; pronotum a little narrower than elytra, oblong, about as coarsely, but not quite as densely punctated as the head, the middle-line smooth; elytra a little longer than pronotum, with rather fine, and not dense, here and there obliquely row-forming punctation; abdomen densely and finely punctate. L. 6-7 mm.

In the ♂ the abdominal fifth and sixth ventral joints are at middle slightly grooved, and the sixth furthermore feebly emarginate at tip.

In this country heretofore seemingly not found outside of Sjaelland, and there rare and local; in alluvium, under moss and vegetation at lakes and marshy woodland pools (Vicinity of Copenhagen, Amager, Lyngby Moors, Flommen at Sorø). Distributed mostly in North Europe, reaching up to Lapland.

5. L. fulvipenne Gravh.

(Gravh. Mon. 104; Erichs. Käf. Mk. Br. I, 505; Gen. Spec. Staph. 590; Kraatz Ins. D. II, 674; Thoms. Skand. Col. II, 198; Muls. et Rey Brévip. 1878, 45; Ganglb. Käf. M. II, 512).

Very closely allied to elongatum, and at times quite difficult to separate it from this. As a rule the red color of the elytra is darker, more brownish, the body a little more slender, head and pronotum narrower;

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but most surely the species are separated by the difference of sex-characters in the ♂♂.

Black, glistening; elytra and abdomen finely haired; elytra either entirely red with a narrow black base (var. letzneri Gerh.) or entirely brownish-red; antennae and mouth-parts red, legs yellowish-red.

Body of uniform breadth and slender; head as broad as pronotum, feebly oviform, on sides with rather dense and robust, at middle with more scattered punctation; antennae slender, their middle joints a little longer than broad; pronotum oblong with parallel sides, a little narrower than elytra, robustly and rather densely punctate, at middle line smooth;

elytra in the winged form (var. Letzneri) as long as pronotum, in the wingless, typical form, a little shorter than pronotum, and slightly impressed, in both rather robust and densely punctate, their posterior margin from corner to suture very finely, yet distinctly margined; abdomen finely and densely punctate. L. 8-9 mm.

In the ♂ the abdominal fifth and sixth ventral joint at middle very feebly or indistinctly grooved, without arranged hair-rows as in the two following species, the sixth joint at tip rather feebly produced (Fig.127). In the ♀ the incision of the seventh free dorsal joint is as broad as long (which however only can be seen when the abdominal tip is drawn in). In other species this incision in the ♀ is longer than broad.

Distributed everywhere in North and Middle Europe, rather frequent in this country, as well in as outside of forests, on damp ground, under leaves, in alluvium at shores and like places.

Fig. 127. Abdominal tip, seen from ventral side, in Lathrobium fulvipenne Gravh. ♂.

6. L. elongatum Linn.

(Linne Syst. Nat. I, 2, 685; Erichs. Käf. Mk. Br. I, 504; Gen. Spec. Staph. 589; Kraatz Ins. D. 672; Thoms. Skand. Col. II, 198; Muls. et Rey Brévip. 1878, 34; Ganglb. Käf. M. II, 510).

Elongate, of rather uniform breadth, among most closely allied species especially identified by the sex-characters of ♂.

Black, glistening; elytra and abdomen finely haired; elytra most often vividly red, and their anterior third bounded black, more rarely almost entirely black, and only darkly reddish-brown nearest posterior margin and sutural corners (var. fraudulentum Ganglb.); antennae brown-

ish-red; mouth-parts and legs yellowish red; coxae blackish-brown.

Fig. 128. Abdominal four last ventral joints in Lathrobium elongatum Linn. ♂.

Head as broad as pronotum, almost as broad as long with nearly parallel sides, the sides with rather dense and robust, the middle with sparse punctation; -----(Page 450)----- antennae rather robust, their middle joints scarcely longer than broad; pronotum a little narrower than elytra, oblong, with parallel sides, robustly and rather densely punctate, at middle line smooth; elytra distinctly longer than pronotum, with rather robust and dense punctation, their posterior margin very finely marginate nearest to the outer hind corners (cf. fulvipenne); abdomen with dense and very fine punctation. L. 8-9 mm.

In the ♂ the abdominal fourth ventral joint at middle with a suggestion of a groove, the fifth with a feeble, and the sixth with a rather deep groove, which on the sixth joint ends in an angular incision in the posterior margin, the groove on each side of its posterior part is bordered with short black bristles (Fig. 128). In the ♀ the seventh free dorsal joint with a square incision, which is twice as long as broad.

Distributed in North and Middle Europe; common everywhere in our country, especially in woods on damp ground, under leaves, also at the edges of brooks and lakes in alluvium. The larvae is found at Fur-Lake and reared (W. Schlick, 7. 97).

7. L. geminum Kr.

(Kraatz Ins. D. II, 673; Muls. et Rey Brévip. 1878, 37; Ganglb. Käf. M. II, 511. - boreale Thoms. Skand. Col. II, 198).

Very closely allied to, and in appearance much like elongatum, however of more uniform breadth, and often somewhat more robust (Fig. 129); in comparison with elongatum especially recognized by the following details:

Elytra are reddish brown, at base most often black without being sharply bounded; rarely entirely black (var. volgense Hochh.); punctation of head on dorsal side less dense, on ventral side fine and scattered, much finer and more scattered than in elongatum; pronotum broader than in same, however hardly as broad as elytra, these not longer than pronotum, with robust and rather dense punctation. L. 8-9 mm.

In the ♂ the abdominal sixth ventral joint in middle-line posteriorly grooved, but feebly or scarcely emarginate at tip (Fig. 130); the groove is on each side bordered with densely set, short, black hairs.

Fig. 129. Lathrobium geminum Kr.

Distributed in Europe; rare and local in this country, heretofore seemingly found only here and there in Sjaelland, on meadow or marsh-ground, under moss, old mouldy hay, and in alluvium, more often in company with elongatum. In Middle Europe said to be more frequent than same (Ganglb.), rare in Sweeden (Thoms.).

A very closely allied, a little smaller species is L. ripicola Czwal. (boreale Muls.). It deviates from geminum and elongatum in that, the coxae are yellowish-red, lighter than in these, and that the head is fully as broad as pronotum; elytra are either entirely red, or very limitedly dark at base. In regard to the punctation of the head, and sex-characters

in the ♂ it is similar to geminum. L. 7.5-8.5 mm. (Ganglb.).

Fig. 130. Abdominal last two ventral joints in Lathrob. geminum
Linn. ♂.

In Middle Europe this species is rare, in this country it has so far not been identified, but is not improbable.

8. L. brunnipes Fabr.

(Fabr. Ent. Syst. I, 2, 537; Erichs. Käf. Mk. Br. I, 503; Gen. Spec. Staph. 588; Kraatz Ins. D. II, 672; Thoms. Skand. Col. II, 198; Muls. et Rey Brévip. 1878, 50; Ganglb. Käf. M. II, 513).

A little larger and more robust than elongatum; besides by the size, inter alia also easily identified by the color.

Black, glistening; elytra and abdomen finely haired; antennae, mouth-parts, and legs red or brownish-red, the legs often yellowish-red.

The head is distinctly a little narrower than pronotum, short oval, the sides with rather fine and dense, at middle with scattered or sparse punctation; antennae rather slender, their middle joints, especially in the ♂, longer than broad; pronotum a little narrower than elytra, oblong, with parallel sides and rounded off corners, with robust and not dense punctation, with smooth middle-line; elytra in the wingless form (typical form) as long as pronotum, in the winged form (var. luteipes Fauv.) a little longer than pronotum, much finer, but not denser punctated than pronotum; abdomen densely and especially finely punctate; with somewhat dull shine; legs robust. L. 8-10 mm.

In the ♂ the abdominal fifth ventral joint posteriorly at middle with a deep triangular impression, the sixth with a deeply depressed longitudinal groove, and in tip of the groove furthermore with a deep



sharp incision. In the ♀ the sixth ventral joint is tongue-formedly elongated and at each side produced; the seventh free dorsal joint in the ♀ with a carina in middle-line.

Distributed everywhere in North and Middle Europe, and is common in this country, on damp ground, in woods under leaves, at water edges in alluvium. The larvae is found and reared by Cand. W. Schlick (15. 9. 1894).

9. L. fovulum Fabr.

(Steph. Ill. Brit. V, 270; Janglb. Käf. M. II, 513. - punctatum Erichs. Käf. Mk. Br. I, 508; Gen. Spec. Staph. 600; Kraatz Ins. D. II, 679; Thoms. Skand. Col. II, 199; Muls. et Rey Brévip. 1878, 54).

Considerably smaller than brunnipes and with darker legs; somewhat more robust than the following species, filiforme, but with proportionately smaller head than this; for the rest identified by the color.

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Black; pronotum glistening; abdomen dull, together with elytra finely haired; antennae and mouth-parts rust-red, legs brownish red.

The head is distinctly narrower than pronotum, oval, the sides with rather fine, the middle with isolated punctation; the antennae slender, their middle joints longer than broad; pronotum as broad as elytra, oblong, with parallel sides, with rather robust and sparse punctation, at middle line smooth; elytra most often as long as, or a little shorter than pronotum (typical form), more rarely longer than pronotum (var. heteropterum Epp.), with rather fine and sparse punctation; abdomen extremely densely and finely punctate. L. 6-7 mm.



In the ♂ the abdominal fifth ventral joint in middle-line feebly, the sixth more distinctly grooved, and the posterior margin with an angular incision. In the ♀ the seventh free dorsal joint in middle-line with a short and sharp carina.

Distributed in Europe; with us it is rare and local; most often found in woodland marshes north of Copenhagen and at Hillerød, however also in West Sjaelland and at Aalborg. Rare in Sweden and in southern Norway, somewhat more frequent in Middle Europe.

10. L. filiforme Gravh.

(Gravh. Mon. 134; Erichs. Käf. Mk. Br. I, 508; Gen. Spec. Staph. 601; Kraatz Ins. D. II, 681; Thoms. Skand. Col. II, 201; Muls. et Pey Brévip. 1878, 56; Ganglb. Käf. M. II, 513. - lineare Gyllh. Ins. Suec. II, 370).

Narrow, slender and of uniform breadth; identified especially by comparatively broad head, and by the color of the legs.

Black, glistening; elytra and abdomen sparsely haired; antennae and mouth-parts rust-red; legs blackish-brown with rust-red tarsi and knees.

The head (Fig. 131) is as broad as pronotum, short oval, with rather fine and scattered, at middle sparse punctation; the antennae shorter, and more robust than in fovulum, their third joint shorter, not longer than the second, the middle joints as broad as long; pronotum oblong with almost parallel sides, about as broad as elytra, with rather robust and dense punctation, at middle-line smooth; elytra in the wingless form (typical form) shorter than pronotum, in the winged form as long as pronotum, rather densely and finely punctate; abdomen with very fine, dense punctation. L. 6 mm.



In the ♂ the abdominal sixth ventral joint at middle with a feeble groove, which terminates in a small angular incision. In both sexes the side-pieces of the seventh free dorsal joint are "thorn"-shapely tapering, and slightly upcurved.

Distributed in North and Middle Europe, and in this country not rare on damp forest or meadow ground, or in alluvium at water edges.

Fig. 131. Lathrobium filiforme Gravh.

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11. L. longulum Gravh.

(Gravh. Micr. 53; Erichs. Käf. Mk. Br. I, 510; Gen. Spec. Staph. 602; Kraatz Ins. D. II, 681; Thoms. Skand. Col. II, 201; Muls. et Rey Brévip. 1878, 59; Ganglb. Käf. M. II, 514).

The smallest European species of the genus, very narrow, of uniform breadth and cylindrical, much smaller than filiforme and with lighter legs than same.

Black, glistening; elytra and abdomen finely haired; antennae, mouth-parts and legs yellowish-red.

The head is distinctly broader than pronotum, feebly oviform, the sides with rather robust and scattered punctation, at middle with more sparse punctation; antennae proportionately robust, their short third joint not longer than the second, the following as broad as long; pronotum as broad as elytra, $1\frac{1}{2}$ times as long as broad, with robust and rather dense punctation, and smooth middle-line; elytra as long as pronotum (typical form), rarely longer than pronotum (var. longipenne Fairm.), elytra not denser but finer punctated than pronotum; abdomen with fine and dense punctation. L. 4-5 mm.

In the ♂ the abdominal sixth ventral joint at middle feebly grooved, and its posterior margin at each side slightly incurved. In both sexes the seventh free dorsal joint is formed like in the preceding species.

Distributed in North and Middle Europe; not rare in this country, on damp forest and meadow ground, in alluvium at water edges and like places. The form with longer elytra (var. longipenne) is much rarer than the typical form.

12. L. dilutum Er.

(Erichs. Käf. Mk. Er. I, 509; Gen. Spec. Staph. 602; Kraatz Ins. D. II, 684; Muls. et Rey Brévip. 1878, 67; Ganglb. Käf. M. II, 514).

Entirely brownish-or reddish-yellow, glistening; elytra and abdomen finely haired; antennae, mouth-parts and legs most often a little lighter than the body.

From longulum, to which it in form, size and punctation is especially closely allied, and with which the teneral forms can be confused, it is, in doubtful cases ^{marked} _{by} separated by: that the head is a little larger, the eyes distinctly smaller and the genae in front of the eyes longer; the punctation of head and pronotum is noticeably less robust. L. 4.5-5 mm.

In the ♂ the abdominal sixth ventral joint at middle-line slightly grooved and the posterior margin obtuse-angularly emarginate.

Distributed in Middle Europe, but everywhere very rare; in this country it is found singly, most often on high sandy ground in sand pits, at the root of plants and under moss: Hvorup Sandhills and Lundby Hills at Aalborg (auth.), Kolding (Schjødte), Tisvilde (Rosenberg) and several other places.





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